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SECOND SERIES VOL. 11, No. 2

# BULLETIN

## OF

# THE NEW YORK ACADEMY OF MEDICINE

INCORPORATED 1851

FEBRUARY, 1935

PUBLISHED MONTHLY BY

THE NEW YORK ACADEMY OF MEDICINE

2 East 103 Street

New York, N. Y.

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BULLETIN OF
THE NEW YORK
ACADEMY OF MEDICINE

VOL. 11 FEBRUARY, 1935 No. 2

## *Anniversary Discourse**

## THE MEDICAL PROFESSION IN THE NEW AGE

Honorable Fiorello H. LaGuardia
Mayor of the City of New York

I am sure that you will recognize by this time that the only one not in cap and gown and not in evening attire on the platform is the Mayor of the City of New York.

Some one wrote a book about "Fifty Million Guinea Pigs." I wish the author were here tonight to write about one guinea pig who is up before you for dissection. You know, I ought to have come here tonight well prepared. As Dr. Sachs stated, he did invite me about two months ago, and he was very careful to leave with me a large assortment of pamphlets and reports which he advised me to read. And then along came Dr. George Baehr who looks after me from time to time (so if my complexion is sallow that is his fault), and he said, "Never mind those. Read these pamphlets!"

Then Dr. Goldwater said, "I understand you are going to speak at the Academy of Medicine." I said yes. He said, "You had better go well prepared because they are very critical. I have prepared a memorandum for you. You read this."

---

* Delivered before The New York Academy of Medicine, December 6, 1934.

Only a few days ago Dr. Rice, the Health Commissioner said, "Ignore all of that stuff and read this."

And this afternoon John Kingsbury came along and said, "This is the speech you ought to deliver."

To tell you the truth, I haven't read any of them. So anything which I may say you cannot hold any of these gentlemen responsible for.

In looking over the archives of City Hall, I found a very carefully indexed file. If I have to make a speech at a reception for a channel swimmer I can pull a folder out under that name, or six day bicycle riders, I can pull that out. But I couldn't find anything on "medicine" or "academy."

Of course, every one is interested, I suppose, in this new age which we are approaching. It is rather difficult to come to a gathering such as this and talk on a subject with which you are so intimately connected and know so much more about than I do. But it might be useful perhaps in gleaning how little the laymen know about your troubles.

We have a great problem confronting us as a city government in the matter of public health; and I know that I incurred the displeasure of a great many of your profession when I went outside of the City of New York to select a Health Commissioner. I did that, and I would do it again if I had the same problem confronting me, after spending an entire afternoon in this very building where you were good enough to permit me to meet the representatives of the five county medical associations, the representatives of this institution of learning.

I could not agree with the popular belief that because a man happened to be a good doctor or a good surgeon he would be a good public health officer in a city of seven million population. Neither could I agree that if a doctor happened to be a close personal and intimate friend of mine, he would necessarily be a good public health officer. In that meeting which we had in this building there is one thing that was certain, that the five county medical associations

could not agree on any one man, and it was also very clear that each believed the proponent of the other to be either unfit or unqualified or inexperienced for the great office of Public Health Commissioner of the City of New York.

So I did the next best thing, and that was to take a survey of the entire country and to find the man who had established an actual record of accomplishment in public health work. I did that, and I have no apologies to offer.

The next important place in which the medical profession naturally would be concerned was that of the Commissioner of Hospitals. On that I found a unanimity of opinion, that the best available man in the country was Dr. S. S. Goldwater, and I appointed him.

Now gentlemen, I know you want me to talk frankly, and even if you don't, I do not know any other manner of talking. I want to say this, that both of these Commissioners, Public Health and Hospitals, have a most difficult problem and a most difficult task confronting them, and they need not only the cooperation and the moral support of the people of this city, but they are surely entitled to the cooperation of their own profession. I hope you will give it to them. If you don't, we will carry on anyway.

I found this, that there is such a thing as medical politics —if you get what I mean. I found that under the Department of Hospitals where we have 26 different institutions, we had 26 different groups, cliques, to contend with. Dr. Goldwater is trying to break that down, and I think he will be able to do it. I found in the Department of Health a large staff of employees indexing every microbe and germ that some one said they could find. We disposed of something like 400 employees in order to increase the efficiency of that department; and they will never be missed. We sought to replace the 400 by some nine or ten professionally trained and experienced specialists, but in that I learned the other day that I was thwarted by the veto of the Board of Aldermen. But that fight isn't over yet.

Now, there is a strange thing about all of this, and that is, if the City of New York or any other large city, that

under the conditions in which we are living public health is one of the most important functions of municipal government. That department should be entirely divorced of politics and should be entrusted to men who understand the problem of public health. When I took office on January 1st, I stated to the people of this city that we would endeavor to find men who were fit, trained and specializing in the field of the respective departments of the city to head those departments. Now, this is rather new to New York and most unorthodox in politics. We are still in the experimental stage. That is why I welcome this opportunity to meet members of the Academy to ask them for their cooperation in carrying on the work which we have planned.

I found this. I started out with all the enthusiasm of a novice, and of course, as you all know I am new to this game—this is only my thirtieth year of public office—and I believed that I would meet with immediate response and approval from the medical profession with a well thought out, comprehensive program of public health. We planned clinics, and health centers, and surveys, full time instead of part time, and we sought to obtain and to profit by the experience of other cities in establishing a real health service in this city.

But lo and behold, instead of finding the enthusiastic support I really believed we would get from the medical profession, we found a great deal of opposition from the neighborhood doctors who were opposed to a system of public health centers and to the extension of the clinics in the city service. It was rather surprising to me. Yet, on reflection and after talking to a great many of them, I can at least understand their viewpoint.

What we must decide, and what will have to be decided in this country, not within the next few years but perhaps within the next few months, is that very question, whether public health and medical service and the individual health of the citizens must be subordinated to the private practice of the neighborhood doctor or not. Gentlemen, you cannot escape it.

There are two professions that have been the hardest hit in this depression, and they are the medical and the legal. Some one might say, "How about the engineers and the architects?" They, too, have been hit, but the future will take care of them. There is no question about that. The legal profession as such as I see it, has not a very bright outlook in the offing. With education, law, the rights under the law, are no longer such a mystery. True, the lawyer was a big man at the time when education was limited. But now business men and individuals have learned that there isn't much profit in litigation, that there is nothing mysterious or difficult about understanding the meaning of the law, and as we progress we will find that the legal profession becomes less important in our national, social, or economic life.

That is not true of the medical profession. That is important, and so important as to become a matter of public and national concern. No science has progressed any more rapidly or successfully than that of medicine and surgery. The question now presents itself if the benefit of that progress is to be limited to a certain few who can afford to avail themselves of it, or is it a matter in which the public and the government and the state has a direct interest.

Are we to accept a condition where surgery and medicine, skill, accuracy can be so certain and yet be a matter of luxury? That is all it comes to, gentlemen. Or is the state to avail itself of all the progress made in medicine and surgery for the benefit of the state and the community. We could dispense tomorrow with every lawyer in this city, and I will guarantee to you that I can run the City of New York. But we could not dispense with the medical men for one day.

And yet, what is the situation today? It has become so in this period of economic stress where proper medical treatment is almost a luxury. And the medical profession has a hard time of it, a very hard time of it. It is pretty hard for a doctor to sit in his office, to wait for his patients, and the only caller he has is his landlord demanding his

rent, and then go to a clinic and work hard for four hours. We understand that. We understand that perfectly. But seeking to maintain the status quo will not solve either the problem of the community or the problem of the doctor.

We find this—and unfortunately, I took office as the head of this city at the very peak of the depression—that the load on our public hospitals, city hospitals, is constantly increasing, while the private hospitals are hardly able to support themselves. We had to meet a deficiency of nearly a million dollars to care for the cases taken over by private hospitals for which the city was responsible. In other words, the support of the private hospitals decreases in periods of depression almost in inverse ratio that the load on these hospitals increases. Let's be practical about it.

A friend of mine who has a job and earns a fair salary (his salary was reduced of course), has a little daughter who went to a private hospital for a simple tonsil operation. I need not tell you that the child was there two days and a half, and the hospital charge, including the nurse, the room, the operating room service, and other incidental charges, was $108.00. But I submit, suppose that family had to meet a serious major operation. They just could not afford to send her to a private hospital.

What are we going to do? Is a stubborn resistance to existing conditions the answer? I find this confusing reaction, that the neighborhood doctor who is hardest hit by the present economic conditions, rebels most bitterly against any change in our medical service.

As I see it, it is the duty of the state to protect the citizen not only against aggression from a foreign enemy, and to protect him in his individual rights and his property, but also his well being and his health. If medical treatment were to stop we would in a short time have an epidemic or a situation—in which the state must step in. As I see it, gentlemen, the time is not distant when the city or the state will have to take over almost all of the hospitals in a city. Now, I am not talking about New York City alone. I am talking about all cities. Conditions in New York are

no different from those of other large cities. We find daily, the constant appeal for greater aid from the city or state.

Then we come to the question of direct individual medical care before the patient arrives at the hospital stage. Our experience has been that we are called upon to furnish as much medical aid as our relief funds will permit. We are criticized for that from many quarters. Now I ask, what is the answer? Are we to cut that off entirely? Are we to cause an investigation of every case that applies for hospital treatment before he is admitted? That is our responsibility. I cannot agree that we should not use relief funds for medical care or nursing care. Nor can I agree at this time that before a hospital case is admitted we should have a thorough investigation of the ability of that patient to pay. Yet, we cannot continue very much longer under the present conditions.

I repeat, there is a great deal of justification for the protest of a large number of the medical profession against existing conditions. There can be no question as to the facts of the existing conditions. Yet, the minute we approach the mere remote suggestion of any system whereby public health and medical treatment would become a matter for the state, we meet with the most stubborn opposition. One of the two things will eventually have to be decided, and I believe that no one can decide it better than the medical profession itself.

All sorts of arguments are presented. And that is true of any innovation or any change of conditions which have existed for any length of time. I am sure many of you will remember twenty years ago when the discussions were rather heated on the subject of workmen's compensation. It was then said, "Why, that is absurd. Anything like guaranteeing compensation to an injured workman would encourage negligence. Why, workmen would injure themselves in order to get compensation," and old cases three and four hundred years old were cited by learned judges who talked about the fellow servant rule and contributory negligence and the assumption of risk, and all sorts of mouth filling phrases.

It was a hard fight to establish in this country the first employers' liability or workmen's compensation law. The first laws were rather unsatisfactory and defective. Yet, I don't believe that any one today would suggest repealing employers' liability or workmen's compensation laws in any of the states of the Union. That is true of any change which was brought about in this country—always late, always almost a generation, or at least a decade late in coming.

Now we are confronted with the question which is so vital, of such great concern to your profession: first, adequate treatment, surgical and medical, in hospitals in the cities and in the rural districts; secondly, the question of sick insurance.

I attended a conference in Washington a few weeks ago and sat next to a very learned physician—I think he came from the State of Connecticut—and his argument against sick insurance was this. He said, "Theoretically it might be a good thing, but actually it would be very dangerous. Why, if the doctors were selected they would be political selections, and if they were political selections they would be bad." Of course, I had to agree to that. There is no question about that. It wouldn't be how much medicine you know, but what politicians you know. No question about that.

Then he said, "If you leave it open the poor doctors would get all of the practice."

I said, "Why?"

He said, "Well, a conscientious doctor would look at his patient and tell him he is not sick, all he needs is a laxative and tell him to go back to work. That doctor would not be popular. But the poor doctor would say, 'Yes, you are a very sick man. I will give you a certificate so you can go on sick insurance.' He would become very popular."

Now, I don't believe that, don't believe it at all. He asked me why. I didn't know why exactly, but I just had more confidence in his profession than he had. I want to say this,

and this may sound extreme and perhaps unrelated and unconnected, but all during the eleven years of prohibition the percentage of the medical profession who transgressed or violated their ethics was so small that it required a fraction to figure it out. It is unrelated perhaps and unconnected, but it serves in a measure as an illustration of what might be expected of the profession when this country accepts or goes into a nation-wide sick insurance system.

I am rather certain that something of that sort will come about in the near future, because as I have said before, health is a matter of prime importance to the state and to the individual. What the program will be it is rather difficult at this time to state. I don't believe that Washington at this moment has a definite, complete program on the social insurance suggested in the message of the President to Congress, but that the government is giving very serious consideration, thought, and study to these questions I am sure you all know.

There is a school of thought in this country that believes all we have to do is to leave things alone and wait for prosperity to return. The American people, a great many of them, have stiff necks now looking around the corner awaiting it. What we must do is to adjust ourselves to a new normal. It is simply impossible to expect any condition to return with our improved methods of production that would employ all of the present available labor in this country. It just can't be done.

We can produce in four or five months all that the people of this country can consume in one year. So that even if the people had the purchasing power to acquire all that they need, it is necessary to create a spread to give employment to the willing workers that are available in this country.

We are undergoing at this time a complete economic readjustment. And that, of course, will affect the medical profession as it will every other profession, trade, or vocation in the country. I am sure that those in charge or who have the responsibility of solving these problems want the aid, the advice, and the counsel of your profession in the

matter concerning the public health and the care of the sick. But surely we cannot get much help in any doctrine which says, "Close your clinics, close your health centers, no relief for the sick; let them come to their own doctor." That just can't be done.

I tell you, it would be much easier to come here and say that everything is wrong and that people should not be catered to, and that every one should be made to go to his own doctor and carry on. That would be the popular thing to do, and I suppose it would be said that the Mayor knows what he is talking about. But that won't solve any of our problems. We are not going to close any of the clinics. We are going to extend the health centers throughout the city.

The private hospitals call upon us to increase the city hospital facilities. We will open three hospitals now in the course of completion in 1935. And that work must continue.

I hope the Legislature of the State of New York which convenes in January will give a great deal of consideration and thought to this most vital question. And I again urge you as a profession to formulate a plan and to present it to the State Legislature.

Perhaps the time is not distant when some system might be found for adequate compensation to all doctors who render public service. In fact, that will have to be done before very long.

As I said, I do not know how far the national government is going into this particular question. I do know that the President has referred to it in his message to Congress, and I do know that many of his advisors are giving the question a great deal of thought and study.

There is a great deal of criticism, gentlemen, on the part of some as to what the Federal Government is doing in this matter of relief. I am very much amused to hear people talking about state rights and individual freedom and Constitutional limitations, and arguing that the Federal Government should just stay out and give business a chance. As a member of Congress, I lived through that

period when we appealed to our own government to send relief to the State of Arkansas when they were unable to relieve their own citizens who were starving as a result of the drought. They were told, "But that would be unconstitutional, beyond the function of the Federal Government, a matter of local responsibility." Now you know, gentlemen, that either a legal formula or a beautiful phrase never fed any hungry children any time anywhere.

I could tell you from my own experience as a national legislator and as a city official, that I do not know what would have happened in this country if we didn't have Federal aid in our relief problem. Stop to consider, gentlemen. The City of New York has about 400,000 families whose very existence depends upon the relief which they receive. We have spent in the month of October $18,750,000 for relief in this city. We couldn't carry it on alone. The Federal Government contributed 50 per cent of that. In the month of December we are spending $19,325,000 for relief.

Oh, some will say that there are families on the rolls that are not entitled to it. Of course there are. Out of 400,000 families do you suppose that we are one hundred per cent perfect in the administration of that? Why, not even one of your surgeons can be one hundred per cent perfect. Of course, the operation may be successful, but you know what very often happens. So it is with the administration of a relief fund caring for 400,000 families. Suppose we are only 5 per cent off, that would give us a high rating of efficiency. That would still be several thousand families. We are doing the best that is humanly possible.

But suppose that relief were to stop. Then what would happen? And yet, we hear all this talk about the Federal Government going beyond its constitutional powers in this matter of relief.

Now, we have a budget for December. We are trying to raise the money to meet that. I have been criticized for going out and trying to find that money. Well, I will tell you right now that as long as I am Mayor of the City of

New York, I am going to find the money to feed these people who are unemployed through no fault of their own.

I want to express appreciation of the cooperation that the Federal Government has given to New York City and to all the other cities of this country.

Now, gentlemen, of course, it is difficult to come here and paint such a gloomy picture. But we might as well face the facts, and the facts are that the young man who enters medical school today enters it with the knowledge that he is going to devote his life to the public service. If he enters it with any hope of making a fortune out of it, he might as well wait and marry some one and get a father-in-law who can buy him a seat on the Stock Exchange—and his chances are just about the same.

Public health will be protected. The medical profession that has contributed so much to progress, to civilization, to humanity, I am sure will live up to the tradition of their profession and meet these new conditions as they come along.

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## EXHIBITION IN THE LIBRARY

### The Development of the Stethoscope

An exhibition has been arranged by Dr. Paul B. Sheldon, with assistance from the Library Staff, illustrating the history of the stethoscope from its invention by Laennec down to modern times. Stethoscopes from the Academy's Historical Museum are shown, together with others kindly loaned for the occasion. The exhibition will be continued from February 13 to March 16.

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## THE DOCTOR AND THE STATE *

(Unsigned Communication)

A discussion of the relationship of the doctor to society necessarily implies that the medical profession has some peculiar relation to the state, other than that which is applicable to those in other callings.

A critical search for the reasons for such a relation does not show that it arises from any especial privilege which society claims over physicians. The peculiar responsibility rests solely upon tradition—it is the outgrowth of the profession's willingness to accept it as its contribution to the state. It is a tradition which has grown with the ages, has been approved by the doctors and by their fellow citizens. It is a potent factor in our lives and should be so, for if the human race has shown wisdom in its development, the lessons to be learned from the past should be preserved to the present. Otherwise, we shall lose what is of inestimable value.

Thus the subject must be approached from a viewpoint which differs from and is held to be more worth while than the purely materialistic.

There are many reasons in support of the view that the difficulties in which the world finds itself at the present time result largely because of a departure from spiritual values. Self-interest, selfishness, lack of consideration for others and too crass practicality are all elements in the events of life which have brought us to the edge of a somewhat terrifying precipice.

We, as doctors, are no less endangered by these factors than are others, but we, as doctors, have a peculiar duty in resisting these tendencies if we are to live in accordance with the safeguards which have gathered around the medical profession throughout the ages.

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* This article appears also in the February Number of The East New York Medical Bulletin.

The discussion may well begin by quoting from, "The Principles of Medical Ethics of The American Medical Association" as adopted in June 1912.

"A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals."

After formulating precepts of conduct, the Principles conclude with the following:

"While the foregoing statements express in a general way the duty of the physician to his patients, to other members of the profession and to the profession at large, as well as of the profession to the public, it is not to be supposed that they cover the whole field of medical ethics, or that the physician is not under many duties and obligations besides these herein set forth. In a word, it is incumbent on the physician that under all conditions, his bearing toward patients, the public, and fellow practitioner should be characterized by a gentlemanly deportment and that he constantly should behave toward others as he desires them to deal with him. Finally, these principles are primarily for the good of the public, and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community."

These principles embody the essentials of all similar codes previously put forward from the first days of organized medical practice. They have gained the force of law. In a decision made by the United States Supreme Court, Mr. Justice Brewer states,

"The physician is one whose relations to life and health are of the most intimate character. It is fitting not merely that he should possess a knowledge of diseases and their remedies, but also that he should be one who may safely be trusted to apply those remedies. Character is as important a qualification as knowledge, . . . These propositions have been often affirmed."

Fite in "The Study of Ethics" raises an issue not to be disregarded:

"In all the professions there is a certain felt divergence between the demands of professional honour, and intellectual integrity and the conditions of professional work, and a man who should give unyielding and absolute devotion to honour would not be able to maintain his position . . . For the physician the strictly scientific practice of medicine leads often in one direction, the condition of remuneration in another."

And that cynical philosopher, George Bernard Shaw in his preface to The Doctor's Dilemma states,

"As to the honor and conscience of doctors, they have as much as any other class of men, no more and no less."

If this statement be true, the medical profession does not stand in a peculiar relation of responsibility to the state. Those who have read The Doctor's Dilemma and particularly the Preface thereto cannot have escaped a feeling of resentment at the cold-blooded way in which Bernard Shaw analyzes the weaknesses of the doctor who is called upon to meet an emergency of illness and at the same time recognizes that he must be remunerated for this service.

If one go back in our study to the earliest history of medicine he finds that the Babylonians about twenty-two hundred years before Christ laid down rules for the control of the practice of medicine in the laws as compiled by Hammurabi. Even at that early date, the fees that a physician should receive and the punishments that were to be meted out to him in case his treatment resulted in injury or death are laid down. The scale of fees was a sliding one depending upon the ability of the patient to pay which was very similar to that which is in operation at the present time.

During the subsequent centuries, these regulations fell into disuse and among the Greeks and even the early Romans, there was little effort made to regulate the practice of medicine.

Gradually, however, the situation changed and efforts were made to protect the public against the great amount of quackery, chicanery, cult healing, mysticism, etc., that characterized that period of civilization.

In the 16th Century, the Royal College of Physicians of England adopted the Statuta Moralia for the conduct of medical practice.

It was about 1790 that Sir Thomas Percival, who died in 1804 at the age of 64, formulated a Code of Medical Ethics

which has become the generally accepted standard of ethics governing the relation between doctors themselves and their patients and society.

It is interesting to note that there is recognized at all times the line which divides the interests of the doctor from that of the patient in the question of the care of the latter and the remuneration to be received by the former. This is summed up as follows by Leake in the 1927 edition of Percival's "Medical Ethics,"

> "The fundamental ethical question of the medical profession thus arises: if physicians have a pecuniary interest in treating the ills of humanity, can they in honesty really desire to see mankind in perfect health? Ideally, the answer is 'yes'; hedonistically, it is 'no'; and actually society has found it necessary to interfere by law to safeguard the interests of both. This has usually been done by enacting fee codes and by requiring a certain standard of training and skill before granting permission to practice medicine. That the public required protection from the primitive physician is shown by the fact that all of the early fee codes attempted to apply the principle of *lex talionis* in case the physician harmed the patient."

Thus it is recognized that ethically and hedonistically there is a constant warfare within the doctor's orbit. Tradition teaches that ethics shall prevail. Today we are faced with the problem of abiding by tradition or descending into the market place. If we choose the latter, we must be of the market. If we choose the former, we must remain under the protection of professional ideals.

The earliest record that is found cited in Garrison's "History of Medicine" of an actual license to practice medicine occurred in the Emperor Frederick II's edict in 1224. This followed the establishment at Salerno of a school of medicine, the earliest of its kind, and a candidate for license was examined in public by the masters at that school. The candidate must have studied logic for three years, medicine and surgery for five years, and have practiced for one year under some experienced physician. The candidate in surgery had to give evidence that he had studied the art for at least a year, in particular anatomy. The physician was required to treat the poor for nothing, to visit his patients twice a day and once a night if neces-

sary, to avoid collusion with apothecaries and inform upon them if they adulterated or substituted drugs.

The medical fee was fixed, amounting to about 35¢ for an office visit or for a house visit within the city, and approximately $3.00 for out of town visits, but in this case, the physician must pay his own expenses. The sale of poisons, magic potions and aphrodisiac philters was punishable by death if any person lost his life thereby. It is further noted that foods, drugs and apothecaries' mixtures were examined at stated intervals by inspectors and timely regulations were made in municipal hygiene and rural hygiene.

Garrison comments,

"Given the time at which it was issued, it would be hard to improve upon the plain scope and intention of this law, which was followed by similar ordinances for Spain (1283) and Germany (1347), and was again confirmed by Joanna of Naples (1365).

This edict was a strong factor in raising the status of the physician above that of the then numerous quacks and charlatans.

Let us now pass six hundred years to conditions as they are presented today. An address was given by the Honorable Joseph V. McKee on the occasion of the Anniversary Discourse of The New York Academy of Medicine a year ago entitled "Medicine and Modern Sociological Trends." After an unusually able presentation of the development of medical practice through the times, somewhat impressive to a doctor in that it shows the broad knowledge of our profession which is possessed by a layman, Judge McKee closes with this declaration:

"This is the dedication, the consecration of the physician to the ideals of his profession. But more than that is asked of him today. With these great sociological movements under way and even at fruition, it calls on him not merely to complain, not merely to disagree, not merely to debate but to find a fuller and a freer and a greater place for medicine, not only in the curing of human ills but in the great regime to make life better and happier and nobler—to bring to humankind some of the happiness on earth that the elect expect of heaven."

A year later another Anniversary Discourse was delivered at the Academy by Mayor LaGuardia who chose for his topic, "The Medical Profession in the New Age." And, as we know, President Roosevelt, as a part of his social security program has called together a notable group of medical men and others to formulate a procedure whereby our citizens may receive the benefit of the splendid medical attention that the profession is able to give to them. An adjustment apparently is needed that this service may be rendered most efficiently. The profession up to the present time has been somewhat negligent of this responsibility which now government forces are putting squarely in their hands. Men in high government service are giving serious thought to the relations between the medical profession and the state. Let us, as Judge McKee phrases it, "find a fuller and a freer and a greater place for medicine."

Professor Sigerist, the Medical Historian at Johns Hopkins University last year delivered an address on "The Physician's Profession Through the Ages." In a masterly way he followed the duties and the responsibilities of the doctor to the state and showed inferentially at least that they do have a peculiar responsibility. His address closes with the following:

> "The history of the medical profession today has reached a crucial point, and it is our duty to save the efficiency of a noble profession, that not only has a great past, but a still greater future. I would like to close by repeating what I have written once before; never before has society presented the physician with so wide a field of activity and with so much influential power. If never before, certainly today the doctor may become a statesman, the Asklepios Politikos visualized by Plato."

It is our concern to determine how this may be done and how we shall discharge the peculiar responsibility imposed by long-established tradition upon our noble profession.

The first obligation which rests upon us is to steep ourselves in this tradition with a determination that the heritage which is ours is in no way sullied, and that we are controlled in our activities by a feeling that life is not worth the living unless by our efforts and in accordance

with each one's endowment some betterment of the enjoyment of life is accomplished. This is not sermonizing if we are ourselves in accord with those who believe that the remedy for the terrifying condition in which the world now finds itself lies in an acceptance of spiritual values rather than material.

If there be within our profession those who are not stimulated by a feeling of obligation to live in accordance with this heritage, it is our bounden duty to see that such are made to conform to the spirit of the Hippocratic oath, which is the origin of the high ideals of medical practice. The spirit of this oath has lost none of the force it possessed when it was promulgated, nearly three thousand years ago.

The first obligation of the doctor to the state requires that he be an example in act and teaching to the fact that he is called upon to render service, thinking first of the value of the service rendered and after that of the remuneration to be received therefor, which is the privilege of being ranked as a member of a learned profession.

That there exists a counter responsibility on the part of society to see that in this attitude the doctor's life blood is not sapped and that a procedure is set up whereby he may enjoy a life commensurate with the effort and strength, the sincerity and devotion that he expends for the benefit of society cannot be gainsaid. If my reading of the times is correct, in spite of all the carping and criticism that is aimed at the medical profession, society does recognize this obligation and if we rise to our opportunities, we may do so with a faith that our existence will not be jeopardized.

If, however, we adopt a course of stiff necked blindness to the needs of the world and a willingness to consider that our own interests are paramount to those of others, we will find forced upon us conditions that will neither be to our advantage nor to that of society.

That tragedy is imminent is shown by a letter which appeared in a medical publication recently. There, one who had accepted the spirit of the tradition we have discussed

as the cornerstone of his responsibility, fought valiantly to uphold it and failed—failed because in it there was not the power to sustain life and dependent ones. He was not afraid at having broken the law but at having "deeply wounded that something—tradition—the ideals and concomitant aims that go with our diplomas."

And another physician signs his name to a letter saying that the splitting of fees is all but a universal practice in his experience and that it is not uncommon for the doctor and the consultant to decide upon an operative procedure solely so that both may participate in the expected fee.

When such things as these can be, no one can doubt that some remedy must be found and all must bear a share in creating a relationship that will not permit such despair or such practices to drive a doctor to a sacrifice which thus excoriates his soul.

It was less the medical profession itself than outside influences which inaugurated the great improvement in the education offered by our medical colleges two decades ago. It is not to our credit that education thereafter has received so little attention by us during those two decades, and it is our concern to see that the improvement of the medical undergraduate training gains its full fruition by affording means of further education to the doctor after he has received his degree.

We are fully aware that in many instances the internships in our hospitals are of far less educational value than they should be. In fact, it has been said by one of our most eminent undergraduate educators that in many instances the young doctor has lost something of great value at the termination of his internship which had been in his possession at the time of his graduation. He referred to the painstaking care with which the student approached any problem, whether scientific or clinical, which had been inculcated into him in his student days. With the loose, hurried, unconsidered methods employed in some of our hospitals, the intern adopts short cuts and less orderly

thinking than had been his previous habit. And even more disturbing is the testimony of interns that in some instances they were inducted into habits of low ethics and violation of honest behavior.

It is heartening to know that a serious study of this situation is now being made in this city under the able leadership of a group including the medical school deans and others named by the leading hospitals and the Academy of Medicine. It is to be hoped that this particular obligation will be met in such a way that within a reasonable time the interns will receive excellent training in medicine and its ethics comparable to that which they have received in their undergraduate work.

Even when this is accomplished, our needs in this especial phase will not be met until we go a step farther and provide for the continued education of these same young doctors.

There are at our disposal unequalled educational advantages which are largely going to waste while at the same time there is a group of earnest young men and older ones, too, who would only too gladly avail themselves of these advantages were the proper procedure set up.

The enthusiasm with which doctors at the present time grasp opportunities indicates the gross waste which occurs unless all our facilities are fully utilized. Let each bear his share in accomplishing this.

There is another direction in which our obligation to the state is becoming more and more clearly indicated year by year. This has to do with what is ordinarily considered as falling within the domain of public health. At first sight, there is always a clash between the interests of the public as seen in the activities of our health departments and the practicing physician.

It is with a sense of shame that we recall that when Dr. Hermann Biggs wished to make a real advancement of the public health interests, he was opposed by The New

York Academy of Medicine, a sin which insofar as may be, has been expiated by a whole-hearted support of all public health activities by that institution in subsequent years, with, at the same time due consideration to the proper interest of practising physicians.

Reference was earlier made to the medical aspect of the President's social security program and it is within this that the doctors consider themselves especially menaced. At first glance, any organized effort on the part of society to set up a method whereby sick individuals shall receive medical care, except in the long-established way of seeking it out for themselves and arranging for it by a personal agreement between the patient and a member of the medical profession, appears to many to seriously threaten the very foundation of professional life.

Upon careful study and thoughtful consideration this threat does not seem to be serious provided we as a profession will recognize the necessities of the case and meet them squarely. We cannot escape from the general proposition that it is our desire to see that every ill person receives the best available medical care. Again, we are inevitably faced with that clash between the ideal and the practical to which reference has been made as having been recognized from the earliest days of medical practice. We gladly face our obligation to society because it is founded upon the tradition which we revere. In facing this responsibility, we are met with the requirements of our own needs and the solution whereby these two may be reconciled is no easier today than it has been in the past. Possibly modern conditions make it even more difficult.

The thought which should be uppermost is that the medical profession is amply equipped to face this problem and find its proper solution if it will but recognize the necessity of so doing. The profession has not given the requisite thought to the changing trends of which Judge McKee spoke, nor has it fully awakened to the significance of these trends with the determination to recognize that "The medical profession today has reached a crucial point and it is

our duty to save the efficiency of a noble profession that not only has a great past but a still greater future," as expressed by Dr. Sigerist, and to paraphrase him, certainly today the doctor may become a statesman in a wide field of activity and great influential power.

An effort has been made to present the basis for a belief that the doctor does stand in a peculiar relation to the state and that this relation places upon him an especial obligation. Only brief mention of the various directions in which this responsibility may be discharged has been made. Much could be said of any one of the subjects—the ethical standards of the doctor, his education, his relation to public health activities or the part that he must play in setting up efficient methods of medical practice. It has seemed more important to emphasize the traditional spiritual values which must guide us than to go into further practical detail.

This endeavor has found inspiration from three books and those who are not already familiar with them should become so with the assurance that the reading of them will be not only stimulating but delightful:

| | |
|---|---|
| Sir Thomas Browne . | Religio Medici |
| Stephen Paget . | Confessio Medici |
| Harvey Cushing . | Consecratio Medici |

These, with Percival's Medical Ethics as edited by Leake, will tend to acquaint one with the traditions of our profession and also furnish him with an outlook upon its practice which will be found most helpful in meeting with good spirit the problems of everyday life.

# AN EXHIBITION OF BOOKS SHOWN AT THE GRADUATE FORTNIGHT ILLUSTRATING THE PROGRESS OF GASTROENTEROLOGY

## October 22—November 2, 1934

Arranged by
BURRILL B. CROHN and B. D. ROSENAK

**Physical limitations of space necessitate the omission of many valuable and essential links in the history of the development of this subject. The purpose of this exhibit was to demonstrate the outstanding publications rather than to give an exhaustive display of all works. We wish to thank the Library Staff for their kind assistance in preparing the exhibition.**

### *Hygiene and Medicine in Antiquity*

1. BIBLE.
   The Holy Bible, Conteyning the Old Testament and the New . . .
   London, by Rob. Barker, 1611.

   First issue of the first edition of the authorized version.
   Opened at Chapter XI of Leviticus, to show dietary laws and sanitary regulations.
   Kindly lent by the Union Theological Seminary.

2. JASTROW, MORRIS (1861-1921).
   The Liver in Antiquity and the Beginnings of Anatomy.
   In: Tr. Coll. Physicians of Phila. 3. ser. *29*:117-138, 1907.

   Anatomy began in Antiquity with the study of this organ, regarded at that time as the seat of the soul and of life. It was the organ most carefully scrutinized as a means of divining the future, of exorcizing evil, and of forestalling misfortune.
   Opened at p. 126. Excellent clay models of the liver exist dating back as far as 2000 B.C. (Babylonian period of Hammurabi). The lobes of the liver were studied and the position of the fissures and of the gall bladder noted.

3. HIPPOCRATES (*b. ca.* 460 B. C.).
   Cinquième livre des epidémies. In his: Oeuvres complètes . . . Traduction nouvelle . . . par E. Littrè.
   Paris, Baillière, 1839-1861, vol. 5, pp. 198-259.

   Opened at pp. 206-207. Case 6 is probably a clinical description of a gastric or duodenal ulcer with a spontaneous remission or healing. This short clinical note is a characteristic example of the ability of the first great physician to observe, to correlate and succinctly to describe.

Hippocrates does not attempt an exact diagnosis; he is, however, interested in prognosis and is certain to tell of the outcome of his clinical cases.

4. GALEN (*ca.* 129-200).
De Naturalibus Facultatibus . . . In his: Opera ex Nona Juntarum Editione . . .

Venetiis, apud Juntas, 1625, vol. 1, ff. 289/90-308.

Galen is the outstanding representative of Roman medicine or rather of Greek medicine in Rome. He was an ardent admirer of Hippocrates, but scoffed at the Alexandrians and subsequent schools. His was the dominant influence throughout mediaeval and monastic medicine.
Book III, p. 303 is an excellent example of Galen's knowledge of a gastrointestinal subject. He is lacking in the underlying understanding of anatomy and physiology, yet he is practical, logical and reasonable in his handling of the subject.

5. ————.
On the Natural Faculties, with an English Translation by Arthur John Brock.

London, Heinemann, 1916.

Opened at p. 237: "Thus the two faculties are clearly to be seen in the case of the uterus; in the case of the *stomach* they appear as follows:— Firstly in the condition of *gurgling*, which physicians are persuaded, and with reason, to be a symptom of weakness of the stomach; for sometimes when the very smallest quantity of food has been ingested this does not occur, owing to the fact that the stomach is contracting accurately upon the food and constricting it at every point; sometimes when the stomach is full the gurglings yet make themselves heard as though it were empty. For if it be in a natural condition, employing its contractile faculty in the ordinary way, then, even if its contents be very small, it grasps the whole of them and does not leave any empty space. When it is weak, however, being unable to lay hold of its contents accurately, it produces a certain amount of vacant space, and allows the liquid contents to flow about in different directions in accordance with its changes of shape, and so to produce gurglings."

6. CONSTANTINUS AFRICANUS (*ca.* 1015-1087).
De Stomachi Naturalibus & non Naturalibus Affectionibus . . . In his: Opera.

Basiliae, apud Henricum Petrum, [1536], pp. 215-274.

Constantine of Carthage, called Africanus, was a much travelled man. Through his linguistic abilities and his contact with the Arabians he was able to decipher and translate the Syriac and Arabian translations of the Greek and Roman classical texts back into the mediaeval Latin. Salerno, the seat of the first Christian university, recognized him as a teacher and scribe. His skill as a clinician is shown in the chapter on "Affections of the Stomach."
Opened at pp. 266-267, at the section in which Constantine carefully describes the act and causes of vomiting.

## *Early Clinical Medicine and Renaissance Anatomists*

7. ARETAEUS (CAPPADOX) (Second to third century, A. D.).
On the Causes and Symptoms of Chronic Diseases. In his: Extant works . . . edited and translated by Francis Adams.
London, Sydenham Society, 1856, Book II, pp. 291-373.

Little is known of the life of Aretaeus. He was a contemporary of Galen, but it is only in more modern times that he has been appreciated as the clinician of his period ranking next to Hippocrates.
Opened at p. 353, at section on dysentery, remarkable in its perfect description of the clinical features and pathological picture of instances of ulcerative colitis or dysentery. It is quite obvious that Aretaeus dissected his post-mortem material.

8. AVICENNA (980-1037).
Canon de Medicina. Lib. I-V. Translated by Gerardus Cremonensis.
Venice, Petrus Maufer et socii, 1486.

The translations which follow are taken from: Gruner, O. C. A Treatise on the Canon of Medicine of Avicenna. London, Luzac, 1930.
"The standard *size of the meal* depends on usage and vigour. A normally robust person should take as much as will not produce a sense of heaviness, or a sense of tightness of the hypochondria. There should be no subsequent rumbling in the stomach, or splashing of the food on bodily movement. Nausea should not be experienced, nor a canine appetite, nor loss of appetite, nor great disinclination for exertion, nor sleeplessness. The taste of the food should not repeat in the eructations. If the taste of the food lingers in the mouth a very long time after the meal, it shows that the latter was too heavy.
"A person who cannot digest the amount of food appropriate for him should increase the number of articles of diet, but diminish the quantity.
"A person of atrabilious constitution needs a diet which is very humectant but not very heating.
"A person of choleric constitution needs a diet which is humectant and infrigidant.
"A person who generates hot inflammable blood needs feebly nutritious articles of food, which are cold. One who generates phlegmatic blood needs feebly nutritious articles of diet which are hot and attenuant."

9. MUNDINUS (*ca.* 1275-1350).
Anatomia. Edited by Martinus Pollich de Mellerstat.
[Leipzig, Martin Landsberg, *ca.* 1493].

Mundinus, the son of an apothecary, was born in Bologna. The mediaeval revival of human dissecting centers around him. This little treatise of systematic anatomy based on the dissection of autopsy material was the most important anatomical work in the medical schools until superseded by Vesalius' *Fabrica*.

Opened at f. Biv to show sections dealing with the anatomy of the duodenum, mesentery and stomach. A translation of this portion follows. "And it is said that the first intestine is called the duodenum because its length generally is twelve fingers. And a certain intestinal duct from the gall bladder joins this, and for that reason be careful when you dissect not to cut this duct: but cut the intestine well below the duodenum and ligate it and then begin as classical authors began. You have six intestines. The first is the duodenum, the second the jejunum, the third the ileum, and these are slender and placed superficially. The fourth is the caecum, the fifth is the colon and the sixth is the rectum. All these intestines you will see to be rolled up and continuous and attached dorsally, just as all viscera are attached by a certain part which is called *encaras* or rather the mesentery from the mesenteric [veins] which are in it, and the Bolognese call it colloquially the *interium* as it holds up the intestines."

10. DA VINCI, LEONARDO (1452-1519).

I Manoscritti . . .

Torino, Roux e Viarengo, 1901. Fogli B, Dell'anatomia.

The greatest artist and scientist of the Italian Renaissance. He made over fifty careful and accurate human dissections, years before Vesalius, and drew the muscles and skeleton with great accuracy. He was also interested in the thoracic and abdominal viscera.

Opened to plate preceding p. 99.

This illustration of the thoracic and abdominal cavity shows the oesophagus as a straight tube joining the mouth cavity and the stomach. The intestinal coils he represents in several different forms, but fails to recognize the constant curve of the duodenum. The colon is fairly accurately represented and the appendix is shown.
*The notes are in "mirror writing."*

11. VESALIUS, ANDREAS (1514-1564).

De Humani Corporis Fabrica Libri Septem.

Basileae, ex off. J. Oporini, 1543.

This masterpiece of Vesalius was the culmination of many years of dissection and teaching of anatomy. It is divided into seven books and is beautifully illustrated by Jan Kalkar, a pupil of Titian. It has never been completely translated. Vesalius has been called "The Reformer of Anatomy" and his book completely disposed of Galenical anatomy.

Opened at p. 365.

Book V is devoted to the abdominal viscera. The omentum and the general disposition of large and small bowel are illustrated and described. The vermiform appendix is portrayed, and described in the text. The "mesenteric gland" or pancreas is described, but the stomach, liver, spleen and kidneys are inadequately portrayed.

## *17th Century Anatomists*

12. Aselli, Gaspare (1581-1626).
De Lactibus . . .
Mediolani, apud J. B. Bidellum, 1627.

One of the post-Vesalian anatomists, Aselli was the first to oppose the Galenic idea that chyle passed directly through the mesenteric veins to the liver. It is said by some that he did not actually see the lacteals, merely inferring their existence. He nevertheless expounded strongly on this subject and subsequent anatomists substantiated his teaching.
His original striking colored woodcuts constitute the first use of this medium in anatomical illustration.

13. Glisson, Francis (1597-1677).
Anatomia Hepatis.
Londini, typ. Du-Gardianis, 1654.

Famed as anatomist, physiologist and pathologist. His most important contribution was an accurate *description of the capsule of the liver as well as of its blood supply.* He was a graduate of Cambridge and was for many years Professor of Physic at his Alma Mater. He was one of the founders of the Royal Society.
Opened at pp. 146-147: description of bile duct.

14. Wirsung, Johann Georg (*d.* 1643).
Figura ductus cuiusdam cum multiplicibus suis ramulis nouiter in Pancreate . . . in diuersis corporibus humanis obseruati.
Paduae, 1642.

Wirsung, a prosector in anatomy at Padua during Vesling's time, discovered and described the pancreatic duct. The original plate showing this study is exceedingly rare, having been published as a single small oblong folio. Vesling incorporated this fact in his subsequent editions, giving the credit to Wirsung for the discovery. The plate shown was that reproduced in Ludwig Choulant's *History and Bibliography of Anatomic Illustration,* Chicago, Chicago University Press, [1920], p. 244.

15. Wharton, Thomas (1614-1673).
Adenographia, sive Glandularum Totius Corporis Descriptio . . .
Londini, J. G. imp. authoris, 1656.

One of a great group of 17th century anatomists. In this book, the first edition of which is shown, the various glands are described in greater detail than by previous authors.
Opened at pp. 132-133, to show illustration of duct of submaxillary gland.

16. Stenon, Nicolaus (Stensen, Niels) (1638-1686).
Observationes Anatomicae.
Lugd. Batav., P. de Graaf, 1680.

A priest and physician and an accomplished man in many fields: anatomy, physiology, geology and religion. In 1661 he discovered the duct of the

parotid gland in the sheep and this discovery was published in his *Observationes anatomicae* in Leyden in 1662.

Opened to show illustrations opposite p. 37, of the duct of the parotid gland in sheep.

17. Henle, Friederich Gustav Jacob (1809-1885).
Symbolae ad Anatomiam Villorum Intestinalium. . . .
Berolini, A. Hirschwald, 1837.

One of the greatest histologists of his time and one of the most eminent contributors to anatomy of all time. His outstanding contribution to gastroenterology was the accurate description of the epithelium of the intestines and identification of the intestinal villi. The lymph vessels of the villi were recognized and their communication with the blood vessels of the mesentery was noted.

Opened at p. 37, to explanation of illustrations of epithelium of intestines. Illustration unfolded for view.

## *Chemical Physiology*

18. van Helmont, Joannes Baptista (1577-1644).
Ortus Medicinae . . .
Amsterodami, apud L. Elzevirium, 1648.

A disciple of Paracelsus, van Helmont maintained the idea of "archaeus," the guiding spirit of all material processes. He observed the production of "gas" in the numerous chemical processes characteristic of "fermentations." This gas was a spirit liberated from various substances by the action of fermentation. Gastric digestion began in the stomach as a "fermentation" process which turned food into chyle. Further fermentation or chemical change occurred in the intestinal tract and transformed chyle into "crude blood," thence to the liver as "vital blood" and returned to the heart as the vital spirit or "archaeus."

Opened at pp. 202-203.
van Helmont *considered gastric juice to be "acid."*

19. Sylvius (De la Boë), Franciscus (1614-1672).
Praxeos Medicae Idea Nova. Liber Primus . . .
Lugd. Batav., apud viduam J. Le Carpentier, 1672.

An expositor rather than an investigator, Sylvius divested physiological chemistry of the fantastic trappings given to it by Paracelsus and van Helmont. He was radical and heretical in teaching that "fermentation" was neither spiritual, supernatural nor archaeic.

Opened at pp. 894-895 showing the passages illustrating his ideas on digestion, which he regarded as a chemical fermentation. He emphasized the rôle of saliva and pancreatic secretion, conceiving the process of chymification as a chemical change of the properties of organic matter similar to the transmutations of inorganic matter.

20. DE GRAAF, REINIER (1641-1673).
De Succo Pancreatico. In his: Opera Omnia.
Lugd. Batav., Ex officina Hackiana, 1677, pp. 491-566.

de Graaf was a pupil of Franciscus Sylvius, and at the age of 23 made an investigation of the pancreatic juice, first published in Leyden in 1664. Using a quill as a cannula he examined the secretions of the pancreatic duct in a dog and determined, chiefly by taste, that the juice was "acid." He thought that bile and pancreatic juice mixed and effervesced in the duodenum.
Opened at p. 505: chapter on pancreatic juice. This is an early attempt at experimental physiology with modern scientific technique.

21. DE RÉAUMUR, RENÉ ANTOINE FERCHAULT (1683-1757).
Sur la digestion des oiseaux.
In: Mém. Acad. roy. d. sc., pp. 266-495, 1752.

The investigations of Réaumur were extremely diverse. He was the author of a great work on insects, and was the inventor of the thermometer which bears his name.
In his work on the digestion of birds he utilized the well-known habit of kites of rejecting particles which they could not digest and fed them wire mesh capsules in which portions of food were placed. He studied the solvent action of the gastric juice on these rejected foods and calculated that "putrefaction played no part in gastric digestion," thus refuting van Helmont and Sylvius.

22. SPALLANZANI, LAZARO (1729-1799).
Della Digestione degli Animali. In his: Opere . . .
Milani, Hoepli, 1932, vol. 1, pp. 214-396.

Spallanzani confirmed and extended Réaumur's work upon digestion. He discovered the digestive power of saliva, without recognizing its chemical nature. He also reaffirmed the solvent power of gastric juice. This work appeared in his *Fisica animali e vegetabili*, published in Venice in 1782.
The edition here shown is a modern one.

23. YOUNG, JOHN RICHARDSON (1782-1804).
An Experimental Inquiry into the Principles of Nutrition and the Digestive Process.
[Phila., T. & W. Bradford, 1805.]

This study was the graduating thesis of the young student at the University of Pennsylvania. In it he demonstrated that the flow of gastric juice and of saliva are associated and synchronous. He inferred that the acidity of the gastric secretion was due to phosphoric acid, a misconception corrected shortly after (1824) by Prout.

24. PROUT, WILLIAM (1785-1850).
On the Nature of the Acid and Saline Matters Usually Existing in the Stomachs of Animals.

In: Phil. Tr., Lond., 1824, pp. 45-49.

The first English physiological chemist and distinguished in this field by his discovery that the stomach contains free hydrochloric acid.

25. TIEDEMANN, FRIEDRICH (1781-1861) & GMELIN, LEOPOLD (1788-1853).

Die Verdauung nach Versuchen.

Heidelberg, K. Groos, 1826-7, 2v. in 1.

Opened at vol 1, pp. 272-273.

The authors of this classic monograph on digestion from the experimental viewpoint are contemporaries of Liebig and Wöhler and helped to found the remarkable German school of experimental physiology and of biological chemistry. They were the first to confirm Prout's claim that gastric juice contains free hydrochloric acid. They carried out numerous scientific experiments on digestion in various animals.

## *Experimental Physiology*

26. MAGENDIE, FRANÇOIS (1783-1855).

Mémoire sur le vomissement.

Paris, Crochard, 1813.

The pioneer experimental physiologist of France, he was an ardent defender of animal experimentation and the founder of modern experimental pharmacology and demonstrated the action of many drugs, which he introduced into medical practice. His contributions are numerous, though Garrison says of him: "He discovered only isolated facts, did not try to connect them with one another by any special hypothesis, and so arrived at no important generalizations." He was the teacher of an illustrious pupil, Claude Bernard.

He made important investigations into the mechanism of deglutition and vomiting.

27. BEAUMONT, WILLIAM (1785-1853).

Experiments and Observations on the Gastric Juice.

Plattsburgh, Allen, 1833.

The unique accident which made possible the far-famed observations on the digestive processes in man is herein described. A Canadian half-breed, Alexis St. Martin, sustained a gunshot wound of the abdomen. He survived, but with a gastric fistula. Beaumont availed himself of this unusual opportunity to make the most significant contribution to gastric physiology prior to Pavlov. He found that digestive juices were secreted only when there was food in the stomach and that simple irritation of the mucous membrane would not initiate a flow of gastric juice. He studied the digestibility of various foods, the influence of emotions, of work and of illnesses upon gastric secretion and digestion.

28. Bernard, Claude (1813-1878).
Du suc pancréatique et de son rôle dans les phénomènes de la digestion.
In: Arch. gén. de méd. 4 ser. *19*:60-81, 1849.

Trained in his youth by the Jesuits, Claude Bernard was a pharmacist and a playwright before turning to the pursuit of medicine. He was a pupil of Magendie and his natural talents as a pioneer in experimental physiology made possible his numerous contributions in that field.
His greatest gift to gastro-intestinal physiology was his work on the pancreatic juice (1849-1856), in which he showed the effect of the pancreatic secretion in emulsifying fats and in converting starches into sugars, also its solvent action on proteins.

29. Schwann, Theodor (1810-1882).
Ueber das Wesen des Verdauungsprocesses.
In: Arch. f. Anat., Physiol. u. wissensch. Med., pp. 90-138, 1836.

Schwann was a pupil of Mueller at Bonn and later taught at Louvain. Of his many medical discoveries the most notable was his classic cellular theory, published in 1839. He was also famous as an anatomist (sheath of Schwann) and as a physiologist.
In 1835 he discovered *pepsin* and demonstrated its ability to *convert albumin into peptones.* He also studied the secretion of bile and by means of a "deprivation fistula" was able to prove that bile was essential to digestion and its complete loss from the animal body fatal.

30. Kühne, Willy (1837-1900).
Ueber das Trypsin (Enzym des Pankreas).
In: Verhandl. d. naturhist.-med. Vereins zu Heidelberg, (1876), n. F. *1*:194-198, 1877.

Kühne was a pupil of Claude Bernard and was Professor of Physiology both in Amsterdam and in Heidelberg. His chief contributions to gastro-intestinal physiology are his *chemical studies of the intermediate digestion of proteins* and his discovery of the proteolytic enzyme in pancreatic juice, which he called *"trypsin."*

31. Pavlov, Ivan Petrovich (1849- ).
The Work of the Digestive Glands. 2. English ed.
London, Griffen, 1910.

Pavlov, the son of a Russian priest, was a pupil of Heidenhain and of Ludwig. From the former he learned the technique of animal surgery and acquired an extraordinary ambidexterity. He was the founder of an eminent school of experimental physiologists.
Opened at pp. 16-17.
Illustration of his gastric pouch. By feeding a dog with such a pouch he was able to demonstrate "psychical secretion" of gastric juice. He showed that section of splanchnic nerves had no effect whereas section of the vagi would stop reflex gastric secretion.
He also studied pancreatic secretion and observed that pancreatic juice was activated by a duodenal substance which he named "enterokinase."

32. Cannon, Walter Bradford (1871- ).
The Movements of the Stomach Studied by Means of the Roentgen Rays.
In: Am. J. Physiol. *1*:369-382, 1898.

Cannon conceived the idea of studying the movements of the gastro-intestinal tract in animals experimentally *by means of the x-ray, utilizing bismuth subnitrate as an opaque medium.*
Opened at pp. 370-371. Plate demonstrating the original tracings of the stomach of the cat at successive intervals following a bismuth meal.

## *History of the Stomach Tube*

33. Hunter, John (1728-1793).
A Case of Paralysis of the Muscles of Deglutition Cured by an Artificial Mode of Conveying Food and Medicines into the Stomach.
In: Tr. Soc. for Improvement of Med. & Chir. Knowledge, Lond., *1*:182-188, 1793.

Hunter came to London in 1748 and studied anatomy under his brother William, and surgery under Cheselden and Pott. He is considered the founder of experimental and surgical anatomy. He has been hitherto regarded as the first to introduce artificial feeding through a flexible tube passed into the stomach, but there is now good evidence that Alexander Monro (secundus) employed this method prior to Hunter's time.

34. Monro, Alexander (secundus) (1733-1817).
Operations in Surgery (manuscript notes of a student), 1775-1790.

Monro was a member of the famous family of surgeons and anatomists whose lives are so closely connected with the development of the Medical School of the University of Edinburgh. He succeeded his father as Professor of Anatomy and Surgery there and lectured between 1759 and 1800.
The manuscript here presented is in the hand of Samuel Davidson, who was a pupil of Monro between 1775 and 1790. These notes, taken at Monro's lectures, contain a description of a disease of the oesophagus with constriction and narrowing, as well as a symptom complex closely resembling cardiospasm.
For these conditions Monro recommended the passage of bougies, and suggested that by passing a hollow flexible tube, the purpose of the bougie and a means of feeding the patient would be provided by one instrument.

35. Larrey, Dominique Jean (Baron) (1766-1842).
Mémoires de chirurgie militaire et campagnes.
Paris, J. Smith, 1812.

Baron Larrey, the greatest French military surgeon of his time and a favorite of Napoleon during his campaigns, devised many operations and contributed much to military surgery.

He was the first to use intubation of the oesophagus in cases of gunshot wounds, devising the method as a means of feeding the famous Marshal, Baron Desault, who was suffering from paralysis of the oesophageal muscles as a result of a penetrating bullet wound.
Opened at pp. 146-147.

36. PHYSICK, PHILIP SYNG (1786-1837).
Account of a New Mode of Extracting Poisonous Substances from the Stomach.
In: Eclectic Report. & Anal. Rev. *3*:111-113, 1813.

Physick, Professor of Surgery at the University of Pennsylvania, is sometimes called "The Father of American Surgery."
He is remembered as the first American to wash out the stomach with a tube and syringe. As far as Physick knew, the idea and method were original with him (1800). He later learned that Alexander Monro (secundus) had previously used the same procedure (1797) and formally acknowledged the priority.

37. JUKES, EDWARD (*fl.* 1822).
New Means of Extracting Opium, &c. from the Stomach.
In: London M. & Phys. J. *47*:384-389, 1822.

Jukes and Francis Bush wrote simultaneously on the subject of lavaging the stomach by means of a hollow flexible gum tube in cases of opium poisoning. Neither writer knew of the work of the other, nor did they know that Physick, an American (1800) had utilized intubation in a very similar manner.
A letter by Bush: "On removing opium from the stomach with a syringe" will be found on p. 541 of this journal.

38. KUSSMAUL, ADOLF (1822-1902).
[Mechanische Behandlung der Magenerweiterung].
In: Tageblatt d. Versamml. deutsch. Naturf. u. Aerzte. *41*:41-42, 1867.

Kussmaul studied at Heidelberg and began his medical career as an army surgeon. He practiced medicine in the country for a short time and then went to Würzburg to study under Virchow.
He was the first to use lavage in cases of gastric dilatation (pyloric stenosis) and made the first attempts at oesophagoscopy and gastroscopy. His report on the use of gastric intubation in three cases of dilatation is found in the above note.

39. EWALD, CARL ANTON (1845-1915).
Beiträge zur Physiologie und Pathologie der Verdauung.
In: Virchow's Arch. *101*:325-375, 1885.

Ewald was an assistant of Frerichs and was Senator's successor at the Kaiserin Augusta Hospital. He is known for his valuable contributions to the knowledge of disorders of digestion. He published his work on intubation for examination of the stomach in 1875, and in conjunction

with Boas, his description of the "test breakfast" in 1885. This simple meal of bread and tea became the standard test meal and is still in universal use.

40. Einhorn, Max (1862- ).
Die neueren Methoden der Magenuntersuchungen.
Reprinted from: New Yorker med. Monatschr. *1*:113-122, 1889.

Einhorn was a graduate of the University of Berlin and later became a practitioner and teacher in New York. He was the inventor of many ingenious diagnostic devices, among them the stomach bucket, in 1890, and the duodenal bucket, in 1908.

## *Classical Descriptions of Gastric Ulcer*

41. Donatus, Marcellus (latter half of 16th century).
De Historia Medica Mirabili Libri Sex.
Francofurti ad Moenum, impensis J. J. Porsii, 1613.

Donatus studied medicine at Padua. He practiced in Venice and later went to Mantua, where he became Secretary of State and was made a Count.
He published in Mantua in 1586 his *De Historia Medica,* in which is found the earliest known report of a gastric ulcer discovered at autopsy. The edition here shown is the one published in Frankfurt after his death. Opened at pp. 308-309.

42. Bonet, Theophilus (1620-1689).
Sepulchretum sive Anatomica Practica. . . .
Genevae, Cramer et Perachon, 1700.

Bonet was a member of a celebrated medical family of Geneva. He graduated in medicine in 1643 and returned to Geneva to practice. He soon became renowned as a prognostician and therapist.
Opened at p. 1123.
Obs. XXV is an excellent account of the history of a doctor's wife, 18 years old, who after passing blood in her stools died of peritonitis on the fourth day of her illness. This was shown by post-mortem examination to be due to the perforation of a gastric ulcer.

43. Baillie, Matthew (1761-1823).
The Morbid Anatomy of Some of the Most Important Parts of the Human Body. 2. ed.
Lond., J. Johnson, 1797.

Baillie was urged to study medicine by his uncle, the celebrated William Hunter, and became a pupil of Hunter and of Morgagni. He was an eminent practitioner in London, as well as an astute student of pathology. His works show a systematic attempt to correlate pathology and clinical medicine.

In the book exhibited, which was first published in 1793, he gives the first clear description of the morbid anatomy and the clinical symptoms of gastric ulcer.
Opened at pp. 140-141.

44. Abercrombie, John (1780-1844).
Pathological and Practical Researches on Diseases of the Stomach, the Intestinal Canal, the Liver, and other Viscera of the Abdomen.
Edinb., Waugh & Innes, 1828.

Abercrombie received his doctor's degree at Edinburgh in 1803 and after spending a year in further study at St. George's Hospital, London, returned to Edinburgh to practice. He kept with scrupulous care a record of every case of scientific interest that came before him and many of these observations are incorporated in his two principal works.
Opened at pp. 34-35 showing a description of a case of gastric ulcer, in which the symptoms of perforation and hemorrhage are noted and excellent recommendations concerning treatment are made.

45. Cruveilhier, Jean (1791-1874).
Maladies de l'estomac. In his: Anatomie pathologique du corps humain.
Paris, Baillière, 1835-42, Vol. 2.

Cruveilhier graduated in 1816 from the University of Paris, where he was a pupil of Dupuytren. He returned to Limoges to practice, but was persuaded to return to Paris as Professor of Pathology.

His *Anatomie pathologique du corps humain* is a remarkably illustrated atlas of gross pathology. Plates showing ulcers of the stomach are here shown. It is often claimed that his was the first pathologic description and depiction of gastric ulcer, and the name "Cruveilhier's ulcer" was much in use in France. However, he was preceded by Abercrombie and Matthew Baillie. Cruveilhier is rightly credited with the differentiation of benign gastric ulcer and carcinoma, but microscopic studies are lacking.

46. Dieulafoy, Georges (1839-1911).
Exulceratio simplex, diagnostic anatomique et diagnostic clinique.
In his: Clinique médicale de l'Hôtel-Dieu de Paris, *2*:23-62, 1897-98.

Dieulafoy was a distinguished practitioner of Paris but although an alert and intelligent physician and an excellent teacher he was not a profound scientific investigator. His work on internal medicine was very readable and popular.

He differentiated acute gastric ulcer which he called "exulceratio simplex" from chronic gastric ulcer, "ulcus simplex" of Cruveilhier. He advanced a toxi-infectious theory of the etiology of acute ulcers and thought that they were the precursors of chronic ulcers. Among his case reports are instances of fatal gastric hemorrhage from acute gastric ulceration at the fundus.

## *Duodenal Ulcer; Typhoid and Typhus Fevers Pathological Anatomy*

47. Hamberger, Georgius Erhardus (1697-1755).

De Ruptura Intestini Duodeni.

Jenae, lit. Ritterianis, [1746].

Hamberger received his doctor's degree at Jena in 1721 and was later Professor of Chemistry, and practiced at that University.

He described, in 1746, the case of a young woman who, after gathering plums in the morning, was seized with violent abdominal pains and died in a short time. Upon opening the abdomen post-mortem Hamberger found gas, fluid, and in the duodenum a perforation the size of a pea. This is probably the first reported case of a *perforated duodenal ulcer.*

48. Curling, Thomas Blizard (1811-1888).

On Acute Ulceration of the Duodenum in Cases of Burn.

In: Med.-Chir. Tr., Lond., *25*:260-281, 1842.

A prominent London surgeon of the 19th century. He became assistant surgeon at the London Hospital at the age of 21, and was associated with that institution until 1869. He is rated as the first man to describe *myxoedema.*

In 1842 Curling pointed out the association between severe superficial burns and duodenal ulcer, and reported 12 cases of this kind. Ulcers of this type are called" Curling's Ulcer."

49. Moynihan, Berkeley George Andrew Moynihan, 1st baron (1865- ).

On Duodenal Ulcer and its Surgical Treatment.

In: Lancet, *2*:1656-1663, 1901.

The son of an army officer, he distinguished himself as a military surgeon. His contributions to abdominal surgery are numerous and important.

His great pioneer work in surgery was his account of the characteristics and symptoms and surgical treatment of duodenal ulcer. Isolated pathological reports of this condition had occasionally been noted and been lost in obscure literature but its occurrence, remarkable frequency, and clinical characteristics were first adequately described by this author.

50. Bretonneau, Pierre (1778-1862).

Notice sur la contagion de la dothinentérie; lue à l'Académie Royale de Médecine, le 7 juillet 1829.

In. Arch. gén. de méd. *21*:57-78, 1829.

Bretonneau wrote on typhoid fever in 1829, describing at that time the lesions in Peyer's patches. He also anticipated the differentiation of typhoid and typhus fevers and was an early supporter of the germ theory of disease.

51. Louis, Pierre Charles Alexandre (1787-1872).

Recherches anatomiques, pathologiques et thérapeutiques sur la maladie connue sous les noms de gastro-entérite, fièvre putride, adynamique, ataxique, typhoïde. . . .

Paris, Baillière, 1829.

This is the first time that the name *typhoid* fever rather than *dothinenteritis* was applied to this disease.

Louis was famous as a teacher of American physicians. Through his influence on such men as O. W. Holmes, the Shattucks, Gerhard and others, he extended a dominating influence upon medicine in the United States.

52. Gerhard, William Wood (1809-1872).

On the Typhus Fever which Occurred at Philadelphia in the Spring and Summer of 1836. . . .

In: Am. J. M. Sc., *19*:289-322, 1827.

After graduating from the University of Pennsylvania in 1831, Gerhard studied in Paris with Pierre Louis. Louis had studied typhoid fever on the continent and had recognized it as a general intestinal inflammation. Gerhard, returning to Philadelphia, soon demonstrated that a continued fever raging here was identical with the typhoid fever in France. In 1836 he studied an epidemic of typhoid fever and was able thereafter *to establish as separate entities typhoid and typhus fever.*

53. Morgagni, Giovanni Battista (1682-1771).

De Sedibus et Causis Morborum. . . .

Venetiis, ex typ. Remondiniana, 1761. 2 vols. in one.

Morgagni received his medical education at Bologna and was much influenced by his teacher, Valsalva. At the age of 29 he was called to Padua as Professor of Surgery to fill the chair once occupied by Vesalius. His life was spent apart from the affairs of the world in indefatigable labors in dissection, clinical consultations and teaching with no thought of self interest or renown.

The works of Morgagni were not published until his seventy-ninth year, when they appeared in the form of five books of informal letters. This work constitutes the foundation of modern pathologic anatomy, bringing about for the first time a systematic correlation of clinical data and post-mortem findings. He was the first to describe the clinical and pathologic features of acute yellow atrophy of the liver. In 1733 Morgagni described a case of duodenal ulcer complicating ulcers of the stomach.

This book is opened at vol. 2, p. 73, to a section in which this very astute clinician and pathologist describes and discusses a case of "emotional jaundice."

54. Baillie, Matthew (1761-1823).
Of a Remarkable Transposition of the Viscera.
In: Phil. Tr., London, *78*:483-489, 1788.

First description of transposition of the viscera as a pathologic entity.

55. Bright, Richard (1789-1858).
Cases and Observations Connected with Disease of the Pancreas and Duodenum.

In: Med.-Chir. Tr., Lond., *18*:1-56, 1833.

Bright was a pupil of Sir Astley Paston Cooper. He was physician to Guy's Hospital for 23 years and the ward where he made his rounds still bears his name. The leading consultant of London in his time, he was known for his dissection of autopsy material as well as for the practice of clinical medicine.

He described essential nephritis and first differentiated between cardiac and renal dropsy. In the field of gastroenterology his clinical descriptions and pathologic studies in pancreatitis and diabetes are classic gems of medical literature.

56. ———.
Account of a Remarkable Misplacement of the Stomach.
In: Guy's Hosp. Rep., *1*:598-603, 1836.

The first pathological and clinical description of a congenital thoracic stomach. Clinical knowledge of this remarkable condition is just appearing in very recent medical literature.

## *Megacolon; Congenital Pyloric Stenosis; Appendicitis*

57. Ruysch, Fredericus (1638-1731).
Observationum Anatomico-chirurgicarum Centuria.

In his: Opera Omnia, Amstelodami, apud Janssonio-Waesbergios, 1737, vol. 1, 86.

A pupil of Sylvius, Ruysch, like the physicians of his time, had wide interests such as botany, chemistry, numerology. He was primarily an anatomist and pathologist; his name is associated with the practice of injecting arteries with colored wax and he is remembered for the excellence of his anatomical illustrations.

Observatio XCII. *Enormis intestini coli dilatatio.* Ruysch was probably the first to report (1691) the findings of an enormous dilatation of the colon in a girl fifteen years of age. The specimen is apparently one of "idiopathic congenital dilatation of the colon" described clinically, *de novo*, almost 200 years later by Hirschsprung.

58. Parry, Caleb Hillier (1755-1782).

Collections from the Unpublished Medical Writings of. . . .

London, Underwoods, 1825, vol. 2, pp. 369-380.

Parry was a close friend of Edward Jenner and a contemporary of many of England's famous men of medicine. He was an accomplished clinician, a keen observer and an original thinker. He confirmed Heberden's work on angina pectoris and gave an accurate account of exophthalmic goitre years before that of Graves or of Basedow. He described an *unusual case of idiopathic dilatation of the colon* probably a century earlier than that of Hirschsprung.
Opened at pp. 372-373.

59. Hirschsprung, Harald (1831-1916).

Stuhlträgheit Neugeborener in Folge von Dilatation und Hypertrophie des Colons.

In: Jahrb. f. Kinderh. *27*:1-7, 1888.

Hirschsprung was Chief of Staff of the Children's Hospital of Copenhagen from 1870. Besides his original description of *dilatation and hypertrophy of the colon in the newborn,* he published papers on congenital occlusion of the oesophagus and of the duodenum, acute rachitis, rheumatic myositis in children, etc.

60. Lewitt, William (*fl.* 1867).

Enlargement of the Colon.

In: Chicago M. J., *24*:359-361, 1867.

William Lewitt, otherwise unknown in American medicine, was the first American to describe, in 1867, a case of congenital dilatation of the colon, with clinical features and post-mortem studies. This publication antedates that of Hirschsprung by almost 20 years. Lewitt was at that time a demonstrator in Anatomy at Rush Medical College, but no further biographical data are available.

61. Beardsley, Hezekiah (1748-1790).

Case of a Schirrhus in the Pylorus of an Infant.

In: Cases and Observations by the Medical Society of New-Haven County, pp. 81-84, 1788.

This is said by Osler to be the earliest volume of medical transactions published in America. Beardsley, an early member of the Society, published in its transactions his observations upon a case of congenital obstruction of the pylorus in a newborn infant. He attended this case for three years and describes with great accuracy the clinical features of the disease and the results of the autopsy performed two days after the death of the infant. His paper was the first report of its kind in America and is contemporary with two similar and independent descriptions in the continental literature.

62. WILKS, SIR SAMUEL (1824-1911).
Lectures on Pathological Anatomy.
London, Longman, 1859.

These studies are the result of a life devoted to clinical medicine and clinical pathology at Guy's Hospital. Among the many brilliant and original descriptions in this volume is one of a type of ulceration of the colon which had hitherto not been differentiated from dysentery or similarly identified forms of colitis. Wilks is here undoubtedly describing a specimen of *severe ulcerative colitis* of the type today classed as *"non-specific."*
Opened at p. 301.

63. FERNELIUS AMBIANUS, JOANNES (1497-1558).
Universa Medicina.
Francofurti ad Moenum, apud A. Wechelum, 1577.

Fernel, besides being famed as a medical practitioner, was active in many fields of research, being the first to measure accurately a degree at the meridian.
Opened at Book VI, p. 218.

The accompanying selection from his *Universa Medicina* is probably the first description of acute appendicitis with perforation. The only doubt hinges on whether the terms *caecum intestinum* refers to the caecum or the appendix, as anatomists of that time used the term to apply to both structures.

64. HEISTER, LAURENZ (1683-1758).
Medical, Chirurgical, and Anatomical Cases and Observations.
Translated . . . by George Wirgman.
London, printed by J. Reeves for C. Hitch [et al.], 1755.

Heister was a widely known man and led a very active and fruitful life. He studied first at Giessen, then went to Holland where he studied anatomy and received his doctor's degree from Harderwyck in 1708. Lectured on anatomy and surgery at Amsterdam and was a surgeon in the Dutch army. Later studied in London and Paris, and eventually became Professor of Anatomy at Altdorf, and later at Helmstädt. His surgical works are numerous and contain a wealth of information. The first German edition of his *Observations* was published at Rostock in 1753.

The accompanying translation is opened at p. 136, Observation CX, "Of an abscess in the vermiform process of the caecum." This is the first description of a case of appendicitis.

65. PARKINSON, JAMES (1755-1824).
Case of Diseased Appendix Vermiformis.
In: Med.-Chir. Tr., Lond., *3*:57-58, 1816.

Parkinson was the son of a physician and one of a cultured and educated family. Little is known of his education, but he was engaged in

practice in 1785 and attended John Hunter's lectures in surgery during that year. He will be remembered in the main for his classical description of paralysis agitans. He was also a reformer and political agitator. One of the early classical descriptions of appendicitis, the first one in English, is written by this author. He recognized perforation as the cause of death in this condition.

66. Fitz, Reginald Heber (1843-1913).

Perforating Inflammation of the Vermiform Appendix, with Special Reference to its Early Diagnosis and Treatment.

In: Boston M. & S. J., *115*:13, 1886.

Fitz received his degree at Harvard in 1868. He spent two years abroad with Rokitansky, Oppolzer and Skoda in Vienna, and with Cornil in Paris. He found his greatest inspiration in Virchow, whose theory of cellular pathology he introduced into the United States. In 1870 he returned to Boston and led an active life in practice and teaching.

This classical article on appendicitis was presented before the Association of American Physicians in 1886. Here was expounded for the first time a clear picture of the clinical course and diagnostic signs of appendicitis, together with its pathologic changes. Fitz advocated immediate operation as the only rational means of saving life.

## *Abdominal Surgery*

67. Bobbs, John Stough (1809-1870).

A Case of Lithotomy of the Gall Bladder.

In: Indiana M. J., *18*:177-180, 1899.

Bobbs, a pioneer surgeon of Indiana, read medicine with Martin Luther of Harrisburgh, Pa. and took a course of lectures at Jefferson Medical College in Philadelphia. He soon took high rank both as a physician and surgeon. When the Medical College of Indiana was organized, he was elected Professor of Surgery and later Dean of the Faculty. The latter part of his life was devoted mainly to surgery, and as an operator he was bold and original.

He performed the first cholecystotomy in 1867. The account of it was published originally in the *Transactions of the Indiana State Medical Society* in 1868 and the above reference is a reprint, somewhat abridged.

68. Billroth, Christian Albert Theodor (1829-1894).

Ueber die Resection des Oesophagus.

In: Arch. f. klin. Chir., *13*:65-69, 1872.

Billroth was educated at Greifswald, Göttingen and Berlin, receiving his doctor's degree from the latter university in 1852. After a year of extensive travel he returned to Germany to become an assistant in Langenbeck's clinic in Berlin. He next taught in Zürich and finally went to Vienna, where he remained as director, surgeon and teacher to

the end of his life. He was a thoroughly trained pathologist and surgeon. He served as an army surgeon in the Franco-Prussian War and distinguished himself in the surgery of gunshot wounds.

Billroth was known as the pioneer in "visceral surgery" and was the first to resect the oesophagus in 1872. He is renowned primarily for his successful resection of the stomach for carcinoma in 1881.

He was the teacher of Wölfler, Czerny, Gussenbauer, von Eiselsberg and von Mikulicz.

69. Wölfler, Anton (1850-1917).

Gastro-Enterostomie.

In: Centralbl. f. Chir., *8*:705-708, 1881.

Wölfler was a pupil of Billroth, and later became Professor of Surgery at Graz and at Prague.

His most important contribution to surgery was made while he was an assistant to Billroth, at which time he performed the *first gastroenterostomy*. This operation was performed in a case of inoperable carcinoma of the pylorus in 1881.

70. von Volkmann, Richard (1830-1889).

Ueber den Mastdarmkrebs und die Exstirpatio recti.

In: Samml. klin. Vortr. *131* (Chir. *42*), 1878.

von Volkmann was the son of a well known physiologist and professor of surgery at Halle. He graduated in medicine from Berlin in 1854 and became an assistant in the surgical clinic of Blasius. He later returned to Halle to practice and to teach surgery.

He is remembered largely because of his description of ischemic contraction, but it must be noted that he was the first to perform a resection of the rectum for carcinoma in 1878.

71. Kraske, Paul (1851-1930).

Zur Exstirpation hochsitzender Mastdarmkrebse.

In: Arch. f. klin. Chir., *33*:563-573, 1886.

Kraske was a student at Leipzig and at Halle during the earliest days of Listerism. As an assistant to Professor von Volkmann he had the opportunity to see the beginnings of the advance in abdominal surgery made possible by anaesthesia and asepsis.

The fame of Kraske as a surgeon rests solely upon his original method of resecting the rectum for carcinoma and implanting the lower cut end of the colon into the same incision.

## *Development of Radiography*

72. CANNON, WALTER BRADFORD (1871- ).
The Movements of the Stomach Studied by Means of the Roentgen Rays.
In: Am. J. Physiol., *1*:369-382, 1898.

This constitutes the pioneer attempt to apply the recently discovered radiographic technique to gastrio-intestinal physiology. The use of bismuth subnitrate was not only a successful technical innovation, but it made possible physiological studies on peristalsis and intestinal function never before envisioned in a normal animal. (See also item no. 32.)

73. ROUX, JEAN CHARLES & BALTHAZARD, VICTOR (1872- ).
Étude du fonctionnement moteur de l'estomac à l'aide des rayons de Röntgen.
In: Arch. de physiol., 5. ser., *10*:85-94, 1898.

This article is the earliest to incorporate the idea of Cannon and to apply the bismuth contrast meal to human beings. Unfortunately the amount of bismuth subnitrate used was insufficient. This suggestion was but little improvement on the filled capsules, metal foreign bodies, coiled metal springs, and bags filled with solution of lead acetate which were among the fantastic devices for visualizing the stomach during this initial period.

74. WILLIAMS, FRANCIS HENRY (1852- ).
The Roentgen Rays in Medicine and Surgery.
N. Y., Macmillan, 1901.

Williams was educated at the Massachusetts Institute of Technology and at Harvard Medical School. He studied in Europe for two years and returned to enter general practice in 1879. He then took up the study of roentgenology to which he devoted himself thereafter. He taught X-ray diagnosis and therapy at Harvard and wrote much on the subject.

The textbook here shown, opened at p. 361, is one of the earliest in which the opaque meal was expounded as a practical mode of gastro-intestinal diagnosis. Here for the first time bismuth was used in sufficient concentration for the outline and study of the normal human stomach. This American pioneer work antedated by three years that of Rieder of Germany.

75. RIEDER, HERMANN (1858-1932).
Radiologische Untersuchungen des Magens und Darmes beim lebenden Menschen.
In: München. med. Wchnschr., *51*:1548-1551, 1904.

Studied in Vienna, Heidelberg and Munich, at which latter place he received his doctor's degree. Served on the staff of the Munich Hospital,

the Medico-Clinical Institute, and under the renowned Ziemssen. He was attracted by Röntgen's discovery (1895) to such an extent that in 1901 he was already beginning to study the form and function of the alimentary tract of man by means of radio-opaque meals of bismuth. This article is the first accurate description of the radiology of the normal alimentary tract of man. It is a classic study, exact, detailed, perfect in observation.

76. Hemmeter, John Conrad (1864-1931).

Neue Methoden zur Diagnose des Magengeschwürs.
In: Arch. f. Verdauungskr., *12*:356-363, 1906.

Hemmeter received his early training, especially in music, in Germany but studied medicine at the University of Maryland. He returned to Europe in 1887 to pursue the study of medicine. He was interested in diseases of the digestive tract and this led to his study of roentgenology and gastroenterology.
He was the first to devise a kymographic method for studying gastric peristalsis, and is said by many to have been the first physician in America to suggest the use of an opaque medium for roentgenologic study of the stomach. The above article constitutes the first visual representation of gastric ulcers by means of this new technique.

77. Holzknecht, Guido (1872-1931) & Jonas, Siegfried (1874- ).

Die radiologische Diagnostik der intra- und extra-ventrikulären Tumoren und ihre spezielle Verwertung zur Frühdiagnose des Magencarcinoms.
Wien, Perles, 1908.

Holzknecht studied in Strassburg and Königsberg and received his doctor's degree in Vienna in 1901. He then became an assistant in Nothnagel's clinic where he became interested in roentgenology. He studied this subject ardently for many years and was famed as a teacher and as a pioneer in the development of the clinical use of the X-ray. He was the first to devise a dosage table for X-ray therapy and did much to clarify the problems of the diagnosis of visceral disease.
His work on tumors of the stomach deals particularly with the roentgen diagnosis of carcinoma of the stomach.

78. Haudek, Martin (1880-1931).

Die Röntgendiagnose des kallösen (penetrierenden) Magengeschwürs und ihre Bedeutung.
In: München. med. Wchnschr., *57*:2463-2467, 1910.

Haudek was educated in Vienna, where he entered the Allgemeine Krankenhaus in 1905. He later became an adjunct in roentgenology there. He was most interested in the diagnosis of diseases of the stomach and duodenum and was the first to describe the "niche symptom" in gastric ulcer in 1910.

79. Cole, Lewis Gregory (1874- ).

The Diagnosis of Post-pyloric (Duodenal) Ulcer by Means of Serial Radiography.

In: Tr. XVII. Internat. Cong. Med. (1913), Lond., Sect. XXII., part II (Radiology), pp. 77-81, 1914.

Cole graduated from the College of Physicians and Surgeons in 1898 and was Professor of Roentgenology at Cornell Medical College from 1913 to 1920.

A very few years after Moynihan's description of duodenal ulcer (1905), Cole's work describing the "Pileus duodeni" appeared. This pioneer work on the roentgenography of the duodenal cap remains a classic contribution.

## "Two-and-a-Half-Foot Shelf" of a Gastroenterologist

**This represented a choice of some (not all) of the modern classics considered essential to a proper understanding of gastroenterology and its relation to internal medicine. The books were chosen by one of us (Burrill B. Crohn).**

Alvarez, Walter Clement
Nervous indigestion.
New York, Hoeber, 1930.

Alvarez, Walter Clement
The mechanics of the digestive tract. 2. ed.
New York, Hoeber, 1928.

Cannon, Walter Bradford
Bodily changes in pain, hunger, fear and rage. 2. ed.
New York, Appleton, 1929.

Cannon, Walter Bradford
The mechanical factors of digestion.
New York, Longmans, 1911.

Carlson, Anton Julius
The control of hunger in health and disease.
Chicago, University of Chicago Press, 1916.

Carman, Russell Daniel
The Roentgen diagnosis of diseases of the alimentary canal. 2. ed.
Philadelphia, Saunders, 1920.

Gaskell, Walter Holbrook
The involuntary nervous system.
London, Longmans, 1916.

HURST, ARTHUR FREDERICK
Constipation and allied intestinal disorders. 2. ed.
London, Frowde, 1919.

HURST, ARTHUR FREDERICK
The Goulstonian lectures on the sensibility of the alimentary canal.
London, Frowde, 1911.

HURST, ARTHUR FREDERICK, and STEWART, MATTHEW JOHN
Gastric and duodenal ulcer.
London, Milford, 1929.

OPIE, EUGENE LINDSAY
Disease of the pancreas. 2. ed.
Philadelphia, Lippincott, 1910.

OSLER, (SIR) WILLIAM
The principles and practice of medicine. 11. ed.
New York, Appleton, 1930.

PAVLOV, IVAN PETROVICH
The work of the digestive glands; translated into English by W. H. Thompson. 2. ed.
London, Griffin, 1910.

POTTENGER, FRANCIS MARION
Symptoms of visceral disease. A study of the vegetative nervous system in its relationship to clinical medicine. 4. ed.
St. Louis, Mosby, 1930.

RANKIN, FRED WHARTON; BARGEN, JACOB ARNOLD; aud BUIE, LOUIS ARTHUR
The colon, rectum and anus.
Philadelphia, Saunders, 1932.

REHFUSS, MARTIN EMIL
Diagnosis and treatment of diseases of the stomach with an introduction to practical gastro-enterology.
Philadelphia, Saunders, 1927.

ROLLESTON, (SIR) HUMPHREY DAVY, and MCNEE, JOHN WILLIAM
Diseases of the liver, gall-bladder and bile-ducts. 3. ed.
London, Macmillan, 1929.

SCHLESINGER, EMMA
Die Röntgendiagnostik der Magen-und Darmkrankheiten. 3. Aufl.
Berlin, Urban, 1927.

TODD, THOMAS WINGATE
The clinical anatomy of the gastro-intestinal tract.
Manchester (Eng.), University Press, 1915.

# LIBRARY NOTES

## Recent Accessions

Agatston, S. A. General ophthalmology.
[N. Y.?, Author?, 1935], 170 p.

Anatomy for dental students, systemic and practical. Edited by E. P. Stibbe.
Balt., Wood, 1934, 429 p.

Arneson, T. J. The new optometry. 2. ed.
Minneapolis, Arneson Clinic, 1934, 190 p.

Babcock, W. W. A textbook of surgery. 2. ed.
Phil., Saunders, 1935, 1312 p.

Barborka, C. J. Treatment by diet.
Phil., Lippincott, [1934], 615 p.

Blanchard, C. E. [et al.]. Office practice for the general practician.
Youngstown, Medical Success Press, 1934, 371 p.

Blech, G. M. & Lynch, C. Medical tactics and logistics.
Springfield, Ill., Thomas, [1934], 205 p.

Blumenthal, F. Ergebnisse der experimentellen Krebsforschung und Krebstherapie.
Leiden, Sijthoff, 1934, 183 p.

Bogert, L. J. Diet and personality.
N. Y., Macmillan, 1934, 223 p.

Braeuning, H. Lungentuberkulose und Schwangerschaft.
Leipzig, Thieme, 1935 [1934], 275 p.

Brailsford, J. F. The radiology of bones and joints.
London, Churchill, 1934, 500 p.

Brain, W. R. & Strauss, E. B. Recent advances in neurology. 3. ed.
London, Churchill, 1934, 442 p.

Broadhurst, J. & Given, L. I. Bacteriology applied to nursing. 2. ed.
Phil., Lippincott, [1934], 564 p.

Bundesen, H. N. Dr. Bundesen's diet book; the safe way to reduce.
Chic., Reilly, [1934], 158 p.

Campbell, D. Handbook of therapeutics. 2. ed.
Balt., Wood, 1934, 444 p.

Carrasco. Prolapsus du rectum.
Paris, Masson, 1934, 196 p.

Crowther, J. A. Ions, electrons, and ionizing radiations. 6. ed.
N. Y., Longmans, 1934, 340 p.

Dobson, J. O. Ronald Ross, dragon slayer.
London, Student Christian Movement Press, [1934], 112 p.

Dodson, A. I. Synopsis of genitourinary diseases.
St. Louis, Mosby, 1934, 275 p.

Etienne-Martin, P. Les diastases de défense.
Paris, Doin, 1934, 228 p.

Fiessinger, N. Physiopathologie des traversées chimiques et bactériennes dans l'organisme.
Paris, Masson, 1934, 370 p.

Fiessinger, N. & Walter, H. Nouveaux procédés d'exploration fonctionnelle du foie.
Paris, Masson, 1934, 171 p.

Francis, E. T. B. The anatomy of the salamander.
Oxford, Clarendon, 1934, 381 p.

Genil-Perrin, G. P. H. Psychanalyse et criminologie.
Paris, Alcan, 1934, 188 p.

Gershenfeld, L. The Jew in science.
Phil., Jewish Pub. Soc. of America, 1934, 224 p.

Gesell, A.; Thompson, H. & Amatruda, C. S. Infant behavior.
N. Y., McGraw-Hill, 1934, 343 p.

Green, T. H. Manual of pathology. 15. ed.
Balt., Wood, 1934, 928 p.

Hammond, T. E. Principles in the treatment of inflammation.
London, Lewis, 1934, 209 p.

Hardy, W. E. Random reflections on ophthalmo-optical history, techniques, philosophy, literature and personalities.
London, Hatton, 1934, 136 p.

Henrici, A. T. The biology of bacteria.
Boston, Heath, [1934], 472 p.

Hertzler, A. E. & Chesky, V. E. Surgery of a general practice.
St. Louis, Mosby, 1934, 602 p.

Jacobson, E. You must relax.
N. Y., McGraw-Hill, 1934, 201 p.

Jelgersma, G. Das Gehirn der Wassersäugetiere.
Leipzig, Barth, 1934, 238 p.

Jung, C. G. Modern man in search of a soul.
N. Y., Harcourt, 1934, 282 p.

Kellogg, L. C. The anatomy of surgical approaches.
Balt., Wood, 1934, 134 p.

Kindberg, M. L. Les dilatations des bronches.
Paris, Masson, 1934, 126 p.

Kuno, Y. The physiology of human perspiration.
London, Churchill, 1934, 268 p.

Lake, N. C. & Marshall, C. J. Surgical anatomy and physiology.
London, Lewis, 1934, 888 p.

Landon, J. F. & Smith, L. W. Poliomyelitis.
N. Y., Macmillan, 1934, 275 p.

Layton, T. B. Catalogue of the Onodi collection in the Museum of the Royal College of Surgeons of England.
[London], Headley, 1934, 131 p.

McCann, F. J. The treatment of common female ailments. 3. ed.
Balt., Wood, 1934, 379 p.

Maliniak, J. W. Sculpture in the living, rebuilding the face and form by plastic surgery.
N. Y., Lancet Press, 1934, 203 p.

Matthes, M. Lehrbuch der Differentialdiagnose innerer Krankheiten. 7. Aufl.
Berlin, Springer, 1934, 804 p.

Miller, C. J. An introduction to gynecology. 2. ed.
St. Louis, Mosby, 1934, 354 p.

Modern (The) home physician. Edited by V. Robinson.
N. Y., Wise, 1934, 728 p.

Montague, J. F. The modern treatment of hemorrhoids. 3. ed.
Phil., Lippincott, [1934], 318 p.

Mummery, J. P. L. Diseases of the rectum and colon and their surgical treatment. 2. ed.
Balt., Wood, 1934, 605 p.

Murrell, W. What to do in cases of poisoning. 14. ed.
London, Lewis, 1934, 208 p.

National Research Council. Committee on Psychiatric Investigations. The problem of mental disorder.
N. Y., McGraw-Hill, 1934, 388 p.

Nicolas, J. & Gaté, J. Tuberculose cutanée et tuberculides.
Paris, Doin, 1934, 482 p.

Nock, A. J. A journey into Rabelais's France.
N. Y., Morrow, 1934, 303 p.

Office International d'Hygiène Publique. International quarantine directory.
Paris, Office International d'Hygiène Publique, 1934, 1039 p.

Osborne, O. T. Mouth infection; clinical histories.
New Haven, [Yale Univ. Press], 1934, 119 p.

von Peham, H. & Amreich, I. Operative gynecology.
Phil., Lippincott, [1934], 2 v.

Péhu, M. & Rougier, A. Z. Les pleurésies à pneumocoques dans l'enfance.
Paris, Gauthier-Villars, 1934, 173 p.

Piéry, A. M. & Le Bourdellès, B. La pratique de la collapsothérapie en phtisiologie. 2 éd.
Paris, Doin, 1934, 350 p.

Queen Charlotte's (The) text-book of obstetrics, by . . . members of the staff of the [Queen Charlotte's Maternity] Hospital. 3. ed.
Balt., Wood, 1934, 679 p.

Radley, J. A. & Grant, J. Fluorescence analysis in ultra-violet light.
N. Y., Van Nostrand, 1933, 219 p.

Rand, W.; Sweeny, M. E. & Vincent, E. L. Growth and development of the young child. 2. ed.
Phil., Saunders, 1934, 429 p.

Rohrer, C. W. G. Researches in cancer.
Balt., Brentwood Print Co., 1934, pt. 1.

Schizophrenia; statistical studies from the Boston Psychopathic Hospital, 1925-1934. [Reprints].
[Boston? 1935?], 1 v.

Semashko, N. A. Health protection in the U. S. S. R.
London, Gollancz, 1934, 176 p.
Semon, H. C. G. An atlas of the commoner skin diseases.
Balt., Wood, 1934, 221 p.
Sherman, H. C. Food and health.
N. Y., Macmillan, 1934, 296 p.
Sihle, M. Über das Weltbild des Arztes.
Wien, Weidmann, [1934], 241 p.
Smith, K. M. Recent advances in the study of plant viruses.
Phil., Blakiston, 1934, 423 p.
Souttar, H. S. Radium and cancer.
London, Heinemann, 1934, 387 p.
Spiers, H. W. A brief outline of modern treatment of fractures.
Balt., Wood, 1935, 129 p.
Sutton, R. L. & Sutton, R. L., jr. Diseases of the skin. 9. ed.
St. Louis, Mosby, 1935, 1433 p.
Swift, S. H. Training in psychiatric social work at the Institute for Child Guidance, 1927-1933.
N. Y., Commonwealth Fund, 1934, 177 p.
Thiers, J. La syphilis du cervelet et des connexions cérébelleuses.
Paris, Doin, 1934, 102 p.
Tidy, H. L. A synopsis of medicine. 6. ed.
Bristol, Wright, 1934, 1112 p.
Traité de climatologie biologique et médicale, publié sous la direction de M. Piéry.
Paris, Masson, 1934, 3 v.
Wertham, F. & Wertham, (Mrs.) F. The brain as an organ.
N. Y., Macmillan, 1934, 538 p.
Wigglesworth, V. B. Insect physiology.
London, Methuen, [1934], 134 p.
Wile, I. S. Handedness, right and left.
Boston, Lothrop, 1934, 439 p.
Williams, J. F. & Brownell, C. L. The administration of health and physical education.
Phil., Saunders, 1934, 598 p.
Williams, K. G. L. Anaesthesia and analgesia in labour.
Balt., Wood, 1934, 96 p.
Wolff, E. A pathology of the eye.
London, Lewis, 1934, 283 p.
Wright, S. Applied physiology. 5. ed.
London, Milford, 1934, 604 p.

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## Bibliographical Department

In the *Bulletin* for November, 1933, a brief sketch of the work of the Bibliographical Department was given, also a

list of bibliographies compiled from 1927 through March, 1933. The list below consists of those compiled during the remainder of 1933. The dates following the titles indicate the years covered in the literature.

Copies of these bibliographies are catalogued and kept in the Library. They may be consulted by anyone who wishes to see them but may not be taken from the Library.

Besides compiling bibliographies the department also checks and corrects those already compiled by physicians and puts them into the required form for publication. It also edits and types medical papers. All this type of work is classed under general bibliographical service and a charge of $1.50 an hour is made for research and editing and $1.00 an hour for typing.

In addition to this service, translating and abstracting are done. The price of full translation is based on the number of words in the original article and the rate is $7.50 per 1,000 words. This price includes a typed copy and one carbon. Abstracting is done on an hourly basis, as is oral translation, at a rate of $1.50 an hour. Articles in English are not abstracted.

Fellows of the Academy may have all work done at half these rates.

### Bibliographies Compiled During 1933

595. List of bibliographies compiled by the Bibliographical Dept. (1927-date)
596. Cost of training nurses (1926-1932)
597. Bibliography of William Gray Schauffler (1901-1923)
598. Hemophilia (selected English references only)
599. Ectopic ureteral openings (1926-1932)
600. Tuberculosis of the middle ear and mastoid (1924-1933)
601. Postural hypotension (1928-1932)
602. Ciliary processes in the iris (and pupillary area) (1897-1933)
603. Gonioscopy (1900-1930)

604. Saponin (1927-1933)
605. Experimental production of tumors by means of tomato juice (1931-1933)
606. Involvement of the larynx in agranulocytic angina (1922-1933)
607. Divergence paralysis (1900-1933)
608. Cysts of the vitreous (1899-1933)
609. Acute mesenteric adenitis (1900-1933)
610. Sinusitis in relation to renal diseases (1910-1933)
611. Calcinosis universalis (English references only) (1923-1933)
612. Cultures and tests made from extracted dead teeth (1925-1933)

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## PROCEEDINGS OF ACADEMY MEETINGS

## JANUARY

### ANNUAL MEETING

January 3

I. EXECUTIVE SESSION—a. Reading of the minutes; b. Report of the Nominating Committee; c. Election of Members; d. Presentation of diplomas.

II. PRESENTATION OF ANNUAL REPORTS—(read by title) The Council, The Trustees, The Treasurer, Committees.

III. PAPERS OF THE EVENING—a. *Address of the Retiring President*, Standards—Achievements, Bernard Sachs; b. *Address of the Incoming President*, Problems facing medicine, Eugene H. Pool; c. Consideration of the Workmen's Compensation Laws, Justine Wise Tulin, Assistant Corporation Counsel, City of New York; d. Medical care and hospitalization of the indigent sick, Hon. Herbert Brownell, Jr., Member, New York State Assembly.

### THE HARVEY SOCIETY (IN AFFILIATION WITH THE NEW YORK ACADEMY OF MEDICINE)

January 17

THE FOURTH HARVEY LECTURE, "Processes of Urine Formation in the Amphibian Kidney," Alfred N. Richards, Professor of Pharmacology, University of Pennsylvania.

This lecture takes the place of the second Stated Meeting of the Academy for January.

### SECTION MEETINGS

SECTION OF DERMATOLOGY AND SYPHILOLOGY—January 2

I. PRESENTATION OF CASES FROM VANDERBILT CLINIC.

II. DISCUSSION OF SELECTED CASES.

SECTION OF SURGERY—January 4

I. READING OF THE MINUTES.

II. PRESENTATION OF CASES—a. Successful suture of penetrating wound of the heart, Joseph B. Stenbuck; b. Presentation from the surgical service of the Knickerbocker Hospital; 1. Unusual angioma of the back (traumatic), A. Joseph Delaney (by invitation); 2. Simple fracture of the coronoid process of the ulna, D. Rees Jensen (by invitation); 3. Gas gangrene. Two cases, Edward R. Easton; 4. Operative therapy for unresolved

hemothorax, John V. Bohrer; 5. Cholecystitis, operation, absence of gall bladder, Stenosis of common duct from contiguous cicatricial tissue, Ellsworth Eliot, Jr.; 6. Five cases illustrating paper of the evening (a).

III. PAPERS OF THE EVENING—a. Refrigerated skin grafts, Jerome P. Webster; b. Perforated ulcers of the duodenum, Edward C. Brenner.

IV. GENERAL DISCUSSION—John Staige Davis, Baltimore (by invitation) Charles Gordon Heyd.

COMBINED MEETING OF THE SECTION OF NEUROLOGY AND PSYCHIATRY and THE NEW YORK NEUROLOGICAL SOCIETY—January 8

I. PAPERS OF THE EVENING—a. Creatine metabolism in muscle disease. The clinical significance of the effect of glycine on the creatinuria and on creatine tolerance, A. T. Milhorat (by invitation), Harold G. Wolff (by invitation); Discussion, E. Brand; b. Experimental analysis of the functions of the frontal association areas in primates, Carlyle F. Jacobsen, Yale University (by invitation); Discussion, Frederick Tilney; c. Some sidelights in the psychology of murder, Gregory Zilboorg; Discussion, Vernon C. Branham, Deputy Commissioner, Department of Correction, State of New York, Israel Strauss.

SECTION OF HISTORICAL AND CULTURAL MEDICINE—January 9

I. READING OF THE MINUTES.

II. PAPERS OF THE EVENING—a. The medical man and the witch towards the close of the XVI century, Gregory Zilboorg; b. Dr. Horace Wells and the discovery of anesthesia, Walter R. Steiner, Hartford.

III. GENERAL DISCUSSION—To be opened by Bernard Sachs.

IV. EXECUTIVE SESSION—Appointment of nominating committee.

SECTION OF PEDIATRICS—January 10

I. PAPERS OF THE EVENING—a. Local hypertrophy and atrophy of fat following insulin injections in juvenile diabetes, Alfred E. Fischer, Alfred W. Pollak; b. The influence of vitamin B supplement during infancy, Herbert L. Elias (by invitation), Reuben Turner (by invitation); c. The role of chronic vitamin C deficiency in the pathogenesis of experimental tuberculosis in the guinea pig, Meridian Greene (by invitation), Morris Steiner (by invitation), Benjamin Kramer; d. The relationship of the morphology of the diphtheria bacillus to its virulence, Lawrence W. Smith (by invitation); e. Electrocardiographic changes and peripheral nerve palsies in toxic diphtheria, Edward A. Burkhardt (by invitation), Cary Eggleston, Lawrence W. Smith (by invitation); f. Basal metabolism of tuberculous children, Anne Topper, Harold Rosenberg (by invitation).

SECTION OF MEDICINE—January 15

I. READING OF THE MINUTES.

II. PAPERS OF THE EVENING—a. Report of cases, William H. Dunn (by invitation); b. Psychiatric aspects of some physical diseases, Gerald R. Jameison; c. Physical aspects of some mental diseases, Gregory Zilboorg.

III. DISCUSSION—Opened by Dana W. Atchley, George Baehr, Joseph C. Roper.

SECTION OF GENITO-URINARY SURGERY—January 16

I. READING OF THE MINUTES.

II. PAPERS OF THE EVENING—a. Recent advances in biochemistry of practical interest to urologists, John A. Killian, Ph.D. (by invitation); b. Notes on kidney function, Herman O. Mosenthal; c. Review of the cardiac status of a patient to be subjected to genito-urinary surgery, Robert H. Halsey; Discussion by Edward L. Keyes, Clarence G. Bandler, Julius J. Valentine, George F. Hoch.

SECTION OF OTOLARYNGOLOGY—January 16

Joint Meeting with the College of Physicians of Philadelphia at the College in Philadelphia

I. READING OF THE MINUTES.

II. PAPERS OF THE EVENING—a. The importance of the Schilling count as diagnostic and prognostic indicator in infections of the ear, nose and throat, Max Strumia; Discussed by Frederick Hemsath (by invitation); b. The veins of the base of the skull and their relation to otolaryngology, Oscar V. Batson; Discussed by William Rogers, Columbia University (by invitation); c. Defective surgical instruments as an avoidable cause of foreign body accidents, Chevalier Jackson; Discussed by Charles J. Imperatori.

III. GENERAL DISCUSSION.

NOTE:—There was a special car on the train from Pennsylvania Station leaving New York at 4 P.M. for members and guests of the Academy, and leaving Philadelphia at 10:54 P.M. The Section members were the guests of the Philadelphia group for dinner at the Rittenhouse Hotel.

SECTION OF OPHTHALMOLOGY—January 21

I. INSTRUCTION HOUR, 7 to 8 o'clock—Slit lamp microscopy; a. Cornea; b. Crystalline lens, Milton L. Berliner, Wendell L. Hughes.

II. DEMONSTRATIONS, 7:30 to 8:30 o'clock—a. Cases showing vascular fundus lesions; b. Slit lamp studies, Milton L. Berliner, Isadore Goldstein, Wendell L. Hughes, Girolamo Bonaccolto, Gordon M. Bruce; c. Display of the newer ophthalmoscopes, Colonial Optical Company; d. Display, Drawings of the ocular fundus, Gustave Bethke (by invitation).

III. SECTION MEETING, 8:30 to 10:30 o'clock—a. Reading of the minutes; b. Report of a series of cases examined by the Ophthalmo-Eikonometer, Wendell L. Hughes; c. Demonstration of the method used at the checking station for tonometers of the Knapp Memorial Hospital, Adolph Posner (by invitation); d. Paper of the evening, The ophthalmoscopic differential diagnosis between arterio and arteriolar sclerosis (with lantern slides), Jonas S. Friedenwald, Baltimore (by invitation); Discussion, Arthur J. Bedell, Walter I. Lillie, Philadelphia (by invitation).

SECTION OF OBSTETRICS AND GYNECOLOGY—January 22

Program Arranged by the Staff of the Margaret Hague Maternity Hospital, Jersey City

I. READING OF THE MINUTES.

II. PAPERS OF THE EVENING—a. Spinal anesthesia in obstetrics, Samuel A. Cosgrove; Discussion to be opened by Jacob P. Greenhill, Chicago (by invitation); b. Report of a series of Latzko operations, James A. Norton (by invitation); Discussion to be opened by Henry T. Burns (by invitation); c. Hospital management of bleeding in late pregnancy, Edward G. Waters (by invitation); Discussion to be opened by Robert A. MacKenzie, Asbury Park (by invitation).

## AFFILIATED SOCIETIES

NEW YORK PATHOLOGICAL SOCIETY *in affiliation with* THE NEW YORK ACADEMY OF MEDICINE

Anniversary Meeting—January 24

I. PRESENTATION OF CASE REPORTS—a. Chronic nephritis, hypertrophy of parathyroid glands and osteitis fibrosa cystica, Earl P. Lasher (by invitation); b. Two cases of ectopic chorio-epithelioma, I. Gerber.

II. PAPERS OF THE EVENING—a. Pathology of Trypanosoma equiperdum infection in rats, David Perla; b. Observations on certain pathological aspects of Schistosomiasis mansoni, Dominic A. DeSanto; c. Chronic pulmonary arteritis in Schistosomiasis mansoni associated with right ventricular hypertrophy, Eugene Clark (by invitation).

NEW YORK ROENTGEN SOCIETY

The regular January meeting of this Society was not held. Instead a joint meeting of all roentgenologists from the Eastern States was held in Boston on Friday and Saturday, January 25 and 26, under the auspices of the New England Roentgen Ray Society.

SECTION OF ORTHOPEDIC SURGERY

Because of the meeting in New York City of the American Academy of Orthopedic Surgeons, January 14 to 18, the Section omitted its January meeting.

NEW YORK MEETING OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE *under the auspices of* THE NEW YORK ACADEMY OF MEDICINE—January 16

I. Ultrafiltration of virus of vesicular stomatitis, J. H. Bauer, H. R. Cox.

II. Carcinomatous changes in virus-induced papillomas of the skin of the rabbit, P. Rous, J. W. Beard.

III. Early diagnosis of rabies by mouse inoculation. Immunity to rabies by mouse protection test, L. T. Webster, J. R. Dawson, Jr.

IV. Numerical relations of an unstable variant of *Salmonella aertrycke*, M. Deskowitz, A. Shapiro (Introduced by F. P. Gay).

V. Hemorrhagic changes in suprarenal cortex of adult rats following pituitarectomy, D. Perla.

VI. Vitamin C content of tissues of laboratory animals under various pathological conditions, E. Harde, H. R. Benjamin (Introduced by W. H. Park).

VII. Isolation of a specific ascorbic acid (Vitamin C) oxidase, H. Tauber, I. S. Kleiner.

VIII. Pulmonary blood velocity in states of congestive heart failure, with specific reference to velocity in the pulmonary venous circuit, H. R. Miller, M. Furman (Introduced by M. Ringer).

IX. Demonstration of hemorrhagins in snake venom by means of the chicken embryo, E. Witebsky, S. Peck, E. Neter (Introduced by Louis Gross).

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## MEMBERS AND ASSOCIATES ELECTED JANUARY 3, 1935

Members:

Meyer Golob ..... 25 West 81 Street

Frederic David Zeman ..... 111 East 88 Street

Maximilian Mark Nemser ..... 57 East 88 Street

Arthur A. Knapp ..... 133 East 58 Street

Philip Reichert ..... 45 West 81 Street

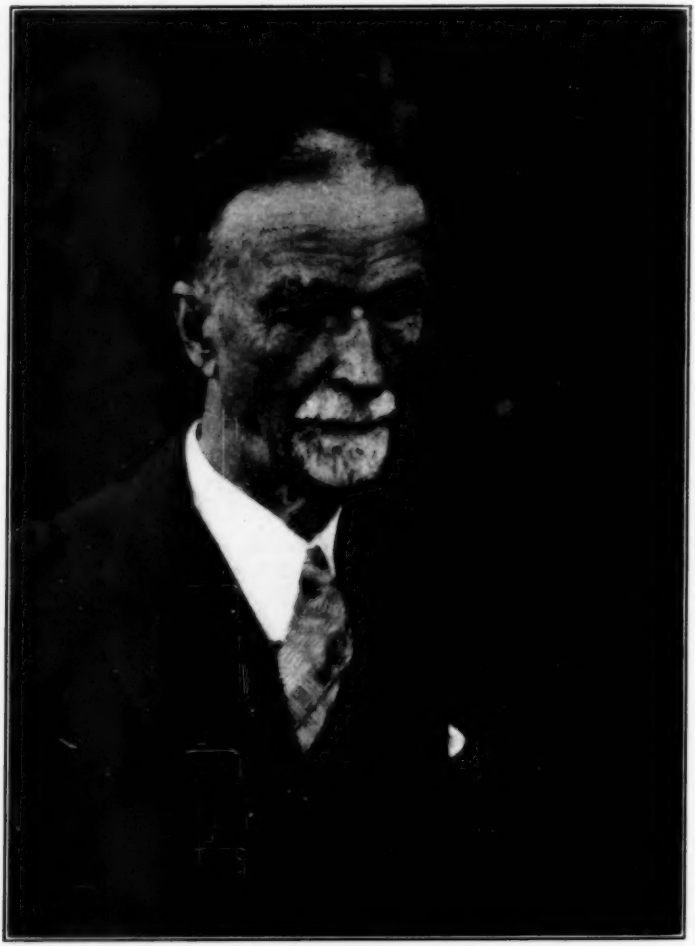
Associate:

Harry Adolph Charipper ..... 55 West 95 Street

## OBITUARY

### THEOBALD SMITH
### 1859-1934

A master of his craft has departed. His intellectual heirs do well to examine the nature of his genius. Its usual characteristics were his; diligence, concentration, insight. But beyond them all, he cherished economy—economy of effort, economy of means, economy of expression. Elegance is the phrase which the competent in another science elect to use to describe his method. His ample vision saw what he saw concretely and its very concreteness made possible its succinct rendering. If he focused sharply on the core of his scientific interest, his friends knew nevertheless that his vision was directed through a wide angled lens. It was part of his culture and part of his tradition that caprice did not color his views; those who knew him best understood that no motive of personal fortune was permitted to obscure the scene about him in its social or its political significance. His taste, as little as any man's dictated the limits of his comprehension; he insisted upon the rectitude of his beliefs irrespective of their cost. A photograph, the last taken in his life, exhibits his salient qualities; pride without obtrusiveness, self-sufficiency without antagonism, learning without display, penetration without myopia, cultivation without egotism, kindliness without sentimentality, exactitude without penury, reserve without unfriendliness. As a person he exhibited his inherited culture in an extraordinary degree, in his concentration, his austerity, his abounding hope. Characteristic of a follower of an old science in a new country, he was essentially a naturalist; he accepted the challenge of novelty in a novel scene. What more natural in consequence than that, trained in medicine, he should devote his talents to the study of problems arising in animal pathology. He did well in his choice—for himself and his characteristic mode of expression, never diffuse, and for his society which profited to an extraordinary degree by the success of his undertakings.



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A distinguished philosopher has said there is no first-rate problem confronting the modern world but the Greeks in their great period had discerned its being. Theobald Smith had the rare fortune of entering on his career when bacteriology was young. Of him it can be said, as of the Greeks, no major problem but he discerned its presence, though in the nature of things, in certain directions, his outlook could be no more than dim. Yet, quite consciously, he blazed new trails. Next to the discovery of bacteria themselves, his contributions to their meaning for ecology in general and for disease were as distinguished as any man's. A mere enumeration of the problems to which he devoted his attention exhibits the wide range of his understanding and of his interest. From the viewpoint of his own satisfaction he cultivated beside, another gift extraordinarily rare among empirical scientists, the ability which permits generalization. For he punctuated at frequent intervals, especially in his later life, the even run of his career by making systematic expositions of the course and the meaning of his science. These studies are contained in more than thirty of his publications. Those who are competent to judge found, there can be no doubt, his power of summary and his insight into significance, his crowning contribution to their own justification in the choice of their own researches. Approval by Theobald Smith, that he saw correctly and justly, has heartened more than one scientific wayfarer on his adventurous journey. To have both scientific gifts, the power to observe and the power to generalize, betokens the possession of a singularly distinguished endowment.

Doctor Smith's first publication appeared in 1883 and his last in 1934. He published single papers in 1883 and 1901. In every other of the 51 years the number was greater, sometimes reaching eleven (in 1897). He did not miss a single year. The total number is above 250. Here is evidence of his industry and devotion. Doctor Smith would have been the first to disclaim the importance of much publishing; quantity for him was never a substitute for care and deliberation. But that he published so uninterruptedly is evidence of another one of his profound con-

victions. He regarded himself, if one may use the phrase, throughout his career, a public servant, first in the Department of Animal Industry (1884 to 1895), then a Professor in Harvard University (1895 to 1914), and finally a Member of the Rockefeller Institute (1914 to 1934). On a public servant devolved, in his conception as in President Cleveland's, a public trust. This sort of responsibility was for him an ethical commonplace. The idea that the public was in his debt he would have regarded as inadmissible. It was an extraordinarily high sense of communal duty which sustained his seemingly frail person triumphantly, through his long years of uninterrupted labor.

An analysis of Doctor Smith's researches discloses other characteristics of his scientific method. His first paper devoted to the study of the tubercle bacillus was published in 1884, one year after receiving his medical degree, and in the second year after the publication of its discovery (1882) by Koch. Beginning in 1884, he published altogether 35 papers on this subject in 24 several years, the last one appearing in 1933. His first report on Texas cattle fever occurred in 1889; there were eight publications, the last in 1899. The first paper on contagious abortion appeared in 1893; there were 22 papers scattered through 14 years, the last in 1932. His interest in parasitism was awakened as early as 1887; to this problem he returned, for him perhaps the most important of all, embracing as it did the meaning of the relation of host and agent, in one form or another until 1932 toward the very end of his life. This list can be extended; but it is long enough to emphasize a point. Here is evidence enough drawn from many subjects to suggest something beyond a catalogue of interests —something beyond concern for passing or opportune occupation. An interest, clearly, was not adopted lightly, but once adopted remained an ever-present solicitude. Study as a profitable episode, as an occasion for opportunistic virtuosity, was it seems foreign to his nature.

But an estimate of Doctor Smith as a scientist which emphasizes merely his industry, merely his pertinacity, merely the wide range of his studies, neglects an appreciation of his essential genius. Industry, pertinacity, range, in themselves have been exhibited by lesser men. Because these qualities were coupled with other more enduring qualities it was possible for him to attain his distinguished stature. It was indeed the compelling, the naive curiosity of a naturalist, bringing to bear on natural phenomena his profound insight together with his sharp analytical abilities, that makes it possible to characterize his discoveries as illustrative of a high, perhaps of the highest, order of imaginative penetration.

There is opportunity for mention of a few only of his important investigations.

First of these were his researches into Texas cattle fever. By their means which constitute a model of method he brought to light a new and unknown mechanism. The mechanism which he discovered is now recognized to be widely exhibited in nature as an important means in the propagation of infectious diseases. In this mechanism, intermediate hosts, a tick in this case, perform the function of vectors of the agents of disease. This function of an intermediate host is applicable in malaria, in yellow fever, African sleeping sickness, typhus fever, trichinosis, tapeworm infections and no doubt in other diseases of men and animals.

Close observation convinced him of an essential difference among the tubercle bacilli which infect men and cattle. A controversy, in which Koch took an opposite position, continued until the correctness of his views came to be generally accepted. The point for which Doctor Smith contended has had further and wide extension at his and at the hands of others. As early as 1899 he spoke of "variation among pathogenic bacteria" and in 1900 of "adaptation of pathogenic bacteria to different species of animals." To these subjects and to the general problem of parasitism and

its bearing on the lives of lower invading and saprophytic forms, on infection and immunity, he returned again and again. Finally he resummarized his views in his Vanuxem Lectures, delivered at Princeton University in 1932-1933. It is not uninteresting that it was in this series (the Vanuxem) in which he developed more completely and more explicitly than elsewhere his conception of one of the most far-reaching problems that confronts biological scientists. That he was moved to give to his life-long reflections on this dominating theme the extended and searching form which these lectures exhibit may, one is tempted to suggest, have been due to their inclusion in a series in which they invited comparison with others offering a wide variety of subjects by scholars as well known and as distinguished as Morgan, More, De Wulf, Osborn, Whitehead. It is a source of lasting gratification that he embraced this opportunity in so masterly a fashion. Nor is it inappropriate in this connection, to observe the care which Doctor Smith took in the construction of his argument, in the choice of his prose so as to suit it exactly to his needs in maintaining his style free from the debased linguistic coin of the moment. If his form was brief, it was none the less elegant and in keeping with the elevation of his life and thought.

He possessed the prepared mind and put it to use on more than one occasion. The first description of a deficiency disease (scurvy), in an experimental animal was due to his possessing this quality. In studying erysipelas in swine, he found that on injecting bacteria derived from them into guinea pigs certain of them exhibited signs of an unfamiliar condition—and died. Death was due he thought to the absence of green food from their diet.

"The investigator," to quote from a letter written by Doctor Smith to Doctor Krumbhaar (October 11, 1933) "must be ready and on the spot when the light comes from whatever direction." Alfred F. Hess*, ever a careful wit-

* Scurvy, Past and Present. J. B. Lippincott Co., Philadelphia and London, 1920.

ness, records the fact that "There is no mention whatsoever of scurvy in animals previous to 1895 when Theobald Smith made these observations." Doctor Smith's words deserve full quotation as illustrative of his method of investigation.

"No. 254 died December 14, twenty-nine days after inoculation, after having shown signs of illness for a few days. There was no local lesion. On both hind limbs subcutaneous and deep patches of hemorrhagic discoloration. One small patch on mucosa of stomach. Caecum hyperaemic. On mucosa scattering ecchymoses and small yellow necrotic spots. The ileocaecal valve encircled by a necrotic line. Cultures were made with bits of spleen, liver, and loops of blood. All but the liver tube remained sterile. In this (agar) a few colonies, not of the injected bacilli appeared.

To explain the death of this guinea pig it will be necessary to record some facts which have been observed for some years in this laboratory. When guinea pigs are fed with cereals (bran and oats mixed), without any grass, clover, or succulent vegetables, such as cabbage, a peculiar disease, chiefly recognizable by subcutaneous extravasation of blood, carries them off in from four to eight weeks. The death of No. 254 was undoubtedly due to the absence of such food, as the attendant had neglected to provide it after the disappearance of grass in the fall of the year. Furthermore, No. 255 was weakened by the restricted diet and succumbed to an inoculation which otherwise might have had no visible effect. This is clearly demonstrated by the following test experiment:

December 29, 1894. Two guinea pigs (Nos. 298, 299) received into the abdomen 0.25 and 0.4 c.c., respectively, of a bouillon culture of this bacillus.

At the same time, two others (Nos. 307, 308) received into the abdomen 0.25 and 0.65 c.c.† of the same culture. These two and a control guinea pig were put into the same cage and fed only oats and bran mixed, while the two first mentioned received daily rations of cabbage in addition.

The outcome of the experiment demonstrates the fatal result following the abstraction of green food. While those fed with cabbage survived, those not fed with it died."‡

The last paragraph of the quotation makes evident that he understood very well that these observations constituted a discovery and indicates clearly its nature. He went no

† "Owing to a slipping of the guard on the piston rod this larger dose was injected unintentionally."

‡ Twelfth and Thirteenth Annual Reports of the Bureau of Animal Industry, 1895-1896, p. 172. Government Printing Office, Washington, 1897.

further with this research; the time was not ripe though he does not hesitate to attribute the events to "abstraction of green food." Ten additional years were required to pass before vitamins and deficiency diseases began to be understood.

Three others of his discoveries require brief mention. First he showed that immunity to infection may be established if individuals likely to be exposed are first treated by injection with killed cultures of appropriate micro-organisms. The principle which was deduced from these experiments is embodied in the current widespread practice of vaccination against typhoid and para-typhoid fevers and cholera.

Second, the phenomenon widely known as anaphylaxis or anaphylactic shock in guinea pigs was observed first in 1904 by Doctor Smith and was in fact known for some time, especially abroad, as the "Theobald Smith phenomenon" so called by Otto. Doctor Smith had spoken to Paul Ehrlich of this observation. The close relation of hay fever, of certain types of asthma and serum sickness, to the mechanism of hypersensitiveness, is now common knowledge.

Third, his researches on a disease of turkeys, called Blackhead, are not sufficiently well known but deserve a place beside those on Texas cattle fever, for they also explore a new principle in infectivity. The underlying conceptions were derived in fact from ideas concerning parasitism. The disease originates in the interplay of activity of a nematode worm and a protozoan parasite. How frequently the principle of interdependent invasion by two organisms exists is not yet known. But an understanding of this form of infection has already had very important and beneficial results in the industry of raising turkeys. Turkey farming has become a profitable enterprise.

Doctor Smith's other contributions to bacteriological technique, immunological practice and administrative reforms in the public health were numerous. They were

the by-products of a busy life. Actually, due to his sense of public responsibility, they must be reckoned as important. They would have constituted contributions more than respectable in the case of other men.

From this rapid analysis of his motives and of his researches, no one will be disappointed to learn that no bacteria have been named for him, nor have methods. His influence has been deeper and more profound. The significance of his reflections has had wider consequence. He grew with the growth of his science and impressed his conceptions upon it at many points. He cared less, it seems, for the details without which there can of course be no science, than for the wide basic principles which he did so much to aid in developing. For him diseases became problems in parasitism; bacteria, the occasion for the study of biological principles—fixity, mutation, variation.

The time obviously has not come, even if it were profitable to do so, to assign to him his place in the hierarchy of men of science. But if a contemporary exercising the perspective permitted to one not connected with his interests may venture an estimate, it is that those whose admiration he has won because of his many distinguished virtues, will place his name among the very greatest of his discipline.

A. E. C.

THE COUNCIL OF THE ACADEMY ON JANUARY 23, 1935, PASSED THE FOLLOWING RESOLUTION:

RESOLVED, that

The Council of The New York Academy of Medicine records its appreciation of the life work of its distinguished Honorary Fellow, the late Dr. Theobald Smith, who died on December 10, 1934. Dr. Smith was distinctly a product of American education. He followed his bachelor degree in philosophy to his doctorate in medicine, and devoted his entire career to the study of the pathology, etiology and cure of disease in their interrelations with the illnesses

of man and animals. He possessed a remarkable imagination and intuition for scientific medical research in those chosen fields. His discoveries were of new and primary importance in many directions, and though often they were at first criticised and rejected by his elders and contemporaries, Dr. Smith lived to see his work universally endorsed and accepted, and died the recipient of many honors and degrees from the universities and scientific societies of America and Europe.

The Council extends its sympathy in their sorrow to his family and to the institutions in which he was still actively at work as counselor and executive.

The Council records further the participation of the Academy in the universal feeling of loss which has been spread through all the scientific communities of the civilized world by the death of Theobald Smith.

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## DEATH OF FELLOW OF THE ACADEMY

DENNETT, ROGER HERBERT, M.D., 842 Park Avenue, New York City; graduated in medicine from Harvard Medical School in 1902; elected a Fellow of the Academy December 3, 1908; died February 3, 1935. Dr. Dennett was a Fellow of the American Medical Association, a member of the County and State Medical Societies, Director of Pediatrics at the Post-Graduate Hospital and Professor of Clinical Pediatrics at the Post-Graduate Medical School. He was Consulting Pediatrician to the Willard Parker, Passaic General, Hackensack, West Side, Broad Street, and Mather Memorial Hospitals.